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**REPORT**  
**of the**  
**SPECIAL JOINT COMMITTEE**  
**on**  
**COAL PIPELINE RESOURCES**

**MARYLAND GENERAL ASSEMBLY**

**Prepared by**  
**RESEARCH DIVISION**  
**DEPARTMENT OF LEGISLATIVE REFERENCE**

**December 1984**



**MEMBERS**

of the

**Special Joint Committee on Coal Pipeline Resources**

Senator Arthur Dorman, Cochairman  
Senator Joseph Bonvegna  
Senator James Clark, Jr.  
Senator Victor Cushwa

Delegate Gerald Curran, Cochairman  
Delegate W. Timothy Finan  
Delegate John Gary  
Delegate Charles Kolodziejwski



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## REPORT OF THE COMMITTEE

The Special Joint Committee on Coal Pipeline Resources, after a very extensive study during the interim between the 1984-1985 sessions, recommends against Maryland granting powers of eminent domain for the construction of a Coal Slurry Pipeline. Our recommendation is based on a 5-3 vote taken at the conclusion of our December 11, 1984 meeting. Some members who opposed the Slurry Pipeline explained their votes. They cited their concern for the protection of the Potomac River as well as the Chesapeake Bay. Others questioned the economics of the project and the cost involved with the electric power customers. Also cited was the frustration of the committee in its attempt to acquire data about current coal transportation costs. Co-chairman Dorman, in explaining his vote, stated that the proponents did not make a case for eminent domain.

Without powers of eminent domain, the construction of a slurry pipeline in Maryland would be possible only if present owners of rights of way and other private property voluntarily permitted pipeline crossings. Railroads oppose coal slurry pipelines and are unlikely to grant them such passage. A contrary recommendation by the Committee, that is, to grant slurry pipelines eminent domain powers, would have constituted a necessary-but-not-sufficient condition for slurry pipeline construction. Detailed studies would still have been necessary to demonstrate environmental soundness to the State and to convince private investors of economic viability.

Ramifications and complications of this issue proved more formidable than was apparent at the outset. Twelve lengthy Committee meetings, held between June and October, 1984, were devoted to taking testimony. Written material submitted by witnesses filled more than two filing drawers. Site visits to operating coal slurry pipelines were precluded because the closest ones are in the Southwest and in France, but data from these operations were reviewed by the Committee. (A schedule of Committee witnesses and issues comprises Appendix A). Additionally, six work sessions were necessary to integrate the various aspects of the issue, to try to resolve discordances between data and estimates submitted by the two sides, to obtain detail and clarification of earlier testimony, to receive advice on legal uncertainties, and to hear results from ongoing studies conducted by the Department of Economic and Community Development.

The rigor and protracted nature of the Committee schedule reflect the fact that there were many component issues, and in most instances, each component issue was inherently hard to assess using the kinds and quality of information available.

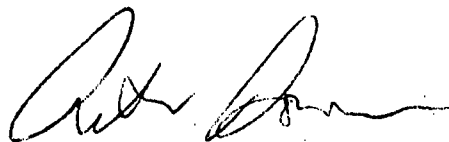
Factual questions, such as environmental impacts or potential savings to electric rate payers were addressed in ways which were often less quantitatively satisfying than the Committee would have liked. Quantitative questions involved estimates of differentials between the two available options, transport via rail versus transport via slurry. Differences between impacts of the transport modes tended to be small compared to the consequences of either mode by itself, making it hard to distinguish real effects from uncertainties in data. "Softness" in environmental data was due in part to lack of technical experience with slurry pipeline operations under Eastern seaboard conditions. Uncertainty about economic implications stemmed in part from insufficient information on certain actual costs (such as costs for contracted coal shipments) as well as uncertainties due to the imprecise nature of economic forecasting. Because of the diversity of estimates and unresolved questions of whose estimates are soundest, we have included in this report synopses by several parties, namely, Committee staff, DECD, proponents and opponents, attached as Appendices B, C, D and E, respectively.

In reviewing these synopses, it is doubtful if the reader will, for example, be able to obtain a reliable estimate of whether coal transported by rail has a greater, equal or lesser impact upon Bay and terrestrial ecosystems (either in routine operation or during accidents) than does coal transported by a slurry pipeline. Whereas some presently unresolved environmental questions could be answered by further field/laboratory studies, the uncertainty surrounding some economic questions is more deeply rooted. For example, the comparative competitiveness of coal for export shipped to Baltimore

via rail and via a slurry pipeline depends upon, among other things, the political and economic climates in several other continents 8, 10 or 12 years hence. Such questions intrinsically cannot be answered with a high degree of confidence. Acknowledging the uncertainty of economic conditions that will prevail a dozen or more years in the future (when a pipeline might be approaching the midpoint of its useful life), should Maryland at this time adopt a policy of encouraging a diversity and competition of coal transportation modes, or is it wiser to take no actions entailing dislocations until there is greater certainty of comparative benefits and costs to Marylanders?

Policy, equity and regionality questions also did not lend themselves to ready solution. For example, what are deemed necessary and sufficient conditions for the State to thrust itself into the role of moderator between existing or aspiring private coal transporters? Is it more or less intrusive, and/or fairer, for the State to grant eminent domain to a newer technology (pipelines) when an older type of coal conveyance (railroads) has historically had the rewards and responsibilities of eminent domain? What measure of "public good" is believed adequate to offset the dislocations that construction will entail? Are there sufficient safeguards to assure that pipeline venture-capital risks are confined to investors and cannot be passed on, by any of a variety of channels, to electric power ratepayers? Can such safeguards be established? If a slurry pipeline could demonstrably reduce electric power consumers' rates, would there be other economic considerations for withholding eminent domain? Regionality introduces still another dimension into the deliberations. What if economic benefits from a slurry pipeline were to accrue primarily to customers in the Northeastern (BG&E service area) portion of the State, but net job losses were to occur in Maryland's Western reaches, or were to occur in one industry (such as railroads) while employment in some other sector, say mining, were to increase?

We wish to thank members of the Committee for their close interest, persistence, and balanced deliberation.



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Senator Arthur Dorman  
Cochairman



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Delegate Gerald J. Curran  
Cochairman

**APPENDIX A**

**SCHEDULE OF COMMITTEE MEETINGS**

Meetings of the Special Joint Committee on Coal Pipeline Resources

1984 Interim

June 5

Organizational Meeting

Committee discussion of purpose, scope, and agenda of hearings.

June 19

Legal and Regulatory Framework

Witness:

Frank O. Heintz, Chairman, Maryland  
Public Service Commission

History and Status of Coal Slurry Pipeline  
Operations

Witness:

William J. O'Byrne, Director of State  
Affairs, Baltimore Gas and Electric

July 10

Fuel Use Needs and Priorities

Witnesses:

C. Michael Loftus, Executive Director,  
Eastern Coal Transportation Conference

George N. Ecklund, Vice President,  
H. Zinder & Associates

Frank N. Wilner, Assistant Vice  
President, Association of American  
Railroads

Facility Resources

Witnesses:

Casters Foster, Coal Utilization Office,  
Department of Energy

Barbara Ann Carroll, Texas Eastern  
Products Pipeline Company

APPENDIX A

Documents and Sources

Witness:

Chris H. Poindexter, Vice President,  
Baltimore Gas & Electric

July 31

Rail Transportation of Coal

Witnesses:

Edward A. Mitchell, President, Potomac  
Electric Power Company; and Chairman,  
Consumers United for Rail Equity

Thomas A. Till, Deputy Administrator,  
Federal Railroad Administration

Frederic W. Yocum, Jr., Vice President,  
Chessie System

K. Donald Vrooman, Director of Fuels  
Procurement, Baltimore Gas and Electric

August 7

System Description of a Maryland Pipeline

Witness:

Chris H. Poindexter, Vice President,  
Baltimore Gas and Electric

August 28

Eminent Domain

Witnesses:

Richard E. Israel, Assistant Attorney  
General, State of Maryland

Clifford C. Whitney III, Counsel to  
Marylanders for Competitive Coal  
Transportation

Albert M. Figinski and Franklin  
Goldstein, Counsel to the Baltimore &  
Ohio and the Western Railroad Companies

John K. Keane, Jr., People's Counsel for  
the Maryland Public Service Commission

George Eatman, Executive Director,  
Slurry Technology Association

Previous and Existing Pipelines

Witnesses:

Ira C. Cooke, Counsel to the Baltimore  
& Ohio and the Western Railroad  
Companies

Michael L. Dina, former Plant Engineer  
and Plant Superintendent, Black  
Mesa/Mohave Generating Station

September 4

Water Issues

Witnesses:

J. Charles Baumer, Jr., Senior  
Scientist, EA Engineering, Science, and  
Technology, Inc.

Irwin J. Kugelman, Director, Center for  
Marine and Environmental Studies,  
Lehigh University

Grover C. Wrenn, President, Environ  
Corporation

Robert H. Harris, Co-Director,  
Hazardous Waste Research Program,  
Princeton University

Charles R. Flynn, Jr., Manager,  
Hydrology and Physical Oceanography  
Program, EA Engineering, Science, and  
Technology, Inc.

Charles Fox, Director, Chesapeake  
Bay Project, Environmental Policy  
Institute

September 11

Health and Safety Issues

Witnesses:

William J. Halvorsen, former Director of  
Process Engineering, Consolidation Coal  
Company; and former Manager, Ohio Coal  
Pipeline

Wilfred G. Checkley, Safety Engineer,  
Maryland Public Service Commission

Land-Use Effects

Witnesses:

Loren D. Jensen, President and Senior  
Scientist, EA Engineering, Science and  
Technology, Inc.

Edwin L. Thomas, Deputy Secretary,  
Maryland Department of State Planning

Peter M. Lafen, Legislative  
Representative, Friends of the Earth

September 17

Committee tour of Brandon Shores Power  
Plant and Washington Suburban Sanitary  
Commission (WSSC) Potomac Water Treatment  
Plant

September 18

Economic Impact

Witnesses:

Barbara A. Sakkestad, Slurry Technology  
Association

Donald S. Goldbloom, Conservation Chair,  
Potomac Chapter, Sierra Club

September 25

Governmental Protections

Representatives from the following Maryland  
state agencies offered testimony or  
answered questions:

Department of Natural Resources  
Department of Health and Mental Hygiene  
Department of Economic and Community  
Development  
Department of State Planning  
Attorney General  
Public Service Commission

October 3

Economic Impact

Witnesses:

Neil Talbot, Energy Systems Research  
Group, Inc.

William G. Mahoney, Counsel for the  
Railway Labor Organizations

Ira C. Cooke, Attorney for the Railroads

James J. J. Oberhaus, President, Marland  
Coal Association

John M. Anderson, Vice President,  
Kearney: Management Consultants

Charles H. Rush, President, Baltimore  
Building and Construction Trades  
Council, AFL-CIO

Ann K. Lower, Executive Director,  
Marylanders for Competitive Coal  
Transportation

Louis L. Goldstein, Comptroller of the  
Treasury, State of Maryland (written  
testimony only)

October 16

Working Session

October 23

Working Session

October 30

Working Session

November 13

Working Session

November 28

Working Session

December 11

DECD Report and Voting Session

Witness:

Frank J. DeFrancis, Secretary,  
Maryland Department of Economic and  
Community Development

**APPENDIX B**

**STAFF REVIEW AND COMMENTS  
TO THE COMMITTEE\***

December 1984

Prepared by the  
Department of Legislative Reference

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\* This material represents staff views only; it in no way is indicative of Committee positions.



Organization of Material Prepared by Committee Staff

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## INTRODUCTION

The bulk of this synopsis consists of proponents' and opponents' economic, environmental and technical arguments, presented in largely tabular form. Discordances are found not only between proponent and opponent numerical estimates of future effects, but also between their interpretations of historical data. A meeting to resolve the large discordances proved unfruitful. Proponent data and comment tables comprise pages 41 to 77. Corresponding opponent material is found on pages 79 to 113. Although lengthier than anticipated, these tables do summarize several pounds of testimony.

Staff comments and critiques make up the remainder of this synopsis. Our material is topically arranged. Sometimes it contains background discussion or policy questions. We treat environmental issues at more length than economic and jobs issues, the latter being covered more exhaustively by the DECD study.

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## I. ENVIRONMENTAL

### A. Background

#### 1. Possible adverse environmental impacts to be assessed include:

- a. Quality of effluent discharged from the slurry dewatering plant;
- b. Damage due to accidental slurry releases;
- c. Other, including effects of withdrawals on stream low flows, impacts due to runoff from coal pile storage, and transient impacts during construction phase.

#### 2. Possible beneficial environmental impacts to be assessed include:

- a. Reductions in noise and traffic delays along railroad routes, and in reduced water pollution due to fugitive emissions and runoff from rail cars;
- b. Reductions in fatalities at grade crossings;
- c. Reductions in release of coal, and/or other materials, due to train collisions or derailments.

#### 3. Characterization of kinds of environmental impact data presented in testimony includes:

##### a. Specific slurry data sources:

- (i) Lehigh University Report (for BG&E), portion dealing with metal concentrations in water from approximate bench-top simulations of local coal;
- (ii) EA Engineering Science and Technology, Inc. Report (for BG&E) dealing with priority hydrocarbon concentrations in water from benchtop simulations of local slurry, and 96 hour bioassays using young flathead minnows (as per EPA protocols) to screen for any acute effects (from all pollutants present) associated with exposure to these waters;

b. Sources of generic quantitative data include:

- (i) Generic surveys from the literature (EPA, Fish and Wildlife, environmental journals) dealing with the ranges in pollutant concentrations in slurries and in coal pile runoffs;
- (ii) Analyses of effluents from full scale coal slurry operations elsewhere (Black Mesa, Cadiz) or pilot plant (ETSI) slurry operations ;
- (iii) Explicit references to a vast literature on dose-response relationships for both mortality and morbidity due to dissolved metals and hydrocarbons and to suspended materials (referenced by many pro and con witnesses). Further, implicit reference to data used by the development documents for the WQ Standards noted in EA and Lehigh reports;
- (iv) Reference to, and reproduction of, EPA data dealing with treatment types and generic efficiencies for removing pollutants from industrial and municipal wastewaters.

c. Comments by many pro and con witnesses, referring back to items a, b above and dealing with episodic event possibilities and possible consequences.

B. Staff Comments

1. Neither proponents nor opponents addressed net environmental impact of the proposed slurry pipeline, that is, the totality of likely adverse plus beneficial impacts, items A(1).and A(2) above. This omission is a basic flaw in methodology used by scientists on both sides.
2. Both proponents and opponents agree, at least implicitly, that the benchtop simulations and analyses run by Lehigh and by EA are not experimentally flawed. Those who performed the first-cut studies and those who critiqued it, both stress that:
  - a. The simulations are approximate, using BG&E coal on hand, and not exactly duplicating the temperature history anticipated for full scale operation, but using W. Va. river water, with anerobic and aerobic conditions, and proper grinding and suspension time simulations;
  - b. Both sides also agree that design studies should incorporate more extensive environmental testing, using samples from many coal seams, seasonal water, adequate replication, and with closer simulation of temperature profiles. Bioassays should employ sensitive biota from local receiving waters, and morbidity (chronic effect) as well as mortality studies should be conducted.

- c. Both sides agree that such a regimen as b. takes time and is costly. (Staff would suspect between 1/4 and 1/2 million dollars ). Proponents believe that such work belongs in the design/permitting phase, and represents more detail than is germane for an eminent domain decision, and more than should be expected before a legal framework to proceed exists. Opponents call for more detailed data at the outset.
- d. Both sides agree, at least implicitly, that the bench top studies are valid initial data. That is, opponents do not maintain that Lehigh or EA results are faulty. (They do question its full relevance insofar as the benchtop treatments were not exact simulations.) This data shows that for the BG&E samples:
  - (i) Within detection thresholds of a few parts per billion, none of the EPA priority hydrocarbons are present;
  - (ii) No statistically significant mortality is observed from 96 hour exposure of minnows to undiluted and untreated (except for coal removal) benchtop effluents;
  - (iii) Dissolved metals are present at concentrations of typically a few to a few dozen parts per billion. In some cases these exceed concentrations for drinking water or for discharge to marine environments. Where standards are exceeded, it is generally by less than a factor-of-ten in concentration.

Staff observes that the Lehigh and EA results presented fall within ranges cited by EPA for interactions between waters and coals elsewhere, and that metal pollutant concentrations are within ranges EPA cites as being amenable to standard clean-up treatments.

### 3. Concerning Treatment of Effluents:

- a. Proponents and Opponents agree that pollutants encountered in bench top simulations, and likely to be encountered in more detailed tests, can be removed from water by using available technology. Both sides concur also that identification and testing the most cost effective clean up methods requires more detailed environmental and engineering work. Precipitation/floculation, filtration, and reverse osmosis are among the clean-up methods to be assessed, in the context of dewatering treatment followed by cooling tower blowdown treatment.
- b. Opponents question what would be done with metals removed from discharge waters. For a typical concentration, say 10 ppb (by weight) at a flow of 8 million gallons per day of effluent, and assuming 100% removal efficiency, and taking the typical metal specific gravity as 6, one computes a per metal

(pollutant) annual collection rate roughly 5 gallons per year. This is not a large volume to dispose of even if shipment to a remote hazardous waste facility were required. If the metal is bound up in an insoluble compound, its volume would be larger, but not large compared to the acre-feet of bottom and fly ash disposed of annually at BG&E plants.

- c. Nearly all detailed questions concerning treatment efficiency costs and reliability await outcomes from further work. However, Staff notes that:

- (i) Impacts from the alternate mode of transport, e.g. fugitive dust and runoff from rail stock and facilities, is also undocumented in a precise way;
- (ii) Regulatory agencies can more readily monitor and compel corrections to point source discharges (such as a dewatering plant or cooling tower outfall) than to non-point sources (such as railroad rights of way and yards);
- (iii) If 8 MGD from the proposed dewatering plant is used as makeup for the Brandon Shores cooling towers, then destruction of biota entrained in present makeup flows from Bay waters would be averted, while the diverted fresh water will have its biota destroyed.

4. Regarding impacts from breakage/leakage in coal slurry pipeline.

- a. Proponents and opponents agree that coal slurry accidents over water are more worrisome than dry site spills. (The latter are deemed unsightly, but experience elsewhere has been that no lasting, consequential environmental damage was documented at arid spill sites).

- (i) The literature concentrates on dissolved metals and hydrocarbons as the components of greatest concern in the slurry. The bench tests done by Lehigh and EA show that for the coals used, water untreated except to remove particulate coal, did not, full strength, induce mortality in minnows after 96 hours. Furthermore, over running waters, dilution would lessen concentrations, thereby reducing the likelihood of acute damage to aquatic life.
- (ii) At the direction of Delegate Gary, staff was asked specifically to find information on impacts due to suspended coal fines, as distinct from dissolved metals and hydrocarbons. They were unable to do so. If particles of coal were inert, like suspended soil, one would expect similar impacts to those associated with the high turbidity encountered with periodic high rainfalls. This question could be addressed by further studies.

- b. Opponents noted forcefully the absence of a "worst case" accident analysis by proponents.

Staff has located no reported data on the frequency or environmental consequences of coal slurry spills over streams or rivers. It is unclear what kinds of statistical or dose-response data could be employed in a worst case scenario involving undetected pipe rupture or leakage into a river.

If "worst case" analyses are deemed valuable, then a balanced treatment should include the "worst cases" averted. That is, for example, number of averted collisions between school buses and coal trains, or, averted number of coal train/chlorine train collisions, with chlorine spill during night time atmospheric inversions in populated mountain valleys. Railroad safety boards and insurance company actuaries probably have such data available.

### C. Policy Questions

During its 1984 Session the General Assembly enacted a Chesapeake Bay program noteworthy for its comprehensiveness, funding levels and duration. Does this legislative commitment to Bay preservation and restoration imply:

1. Prohibition of developments in the watershed having substantial discharge rates, regardless of effluent quality?
2. Continuation of planned and managed development, relying upon newly acquired scientific personnel and sensitive new monitoring capabilities placed in the Health Department by the Bay program (and cross-checked by EPA)?

## II. ECONOMIC

### A. Background

Economic issues include:

1. Benefits or losses to electric power customers;
2. Stimulation of Maryland coal mining, overseas exports, and competitive manufacturing posture;
3. (Job creation/loss and tax increases/declines are treated under "III. Social").

Decisions now pending will have their median impacts at least 16 years hence. (That is, a minimum 6 year preoperational phase, and 1/2 of a 25 year designed life, for a proposed coal slurry pipeline.) Sixteen years is a far horizon for economic predictions. Reliability is substantially decreased when one tries to estimate small-to-moderate differences in economic impacts of rail versus slurry. OPEC pricing, foreign political climates, national spending priorities, and developments in nuclear power are among the factors that can influence long range prospects.

Projections of long term coal demand have been made by the Department of Energy [DOE/EIA-0383(83)], who foresee a 30% increase in U.S. coal demand between 1985 and 1995. Most demand growth nationwide will be by electric utilities and will not be sensitive to exports. Exports (somewhat more than 1/2 being metallurgical rather than steam coal) presently account for about 10% of U. S. production and a similar percentage is anticipated through 1985 (based on anticipated OPEC oil price strategies). Exports account for a large share of Maryland's production, making our demand more sensitive to fluctuation in foreign markets.

### 1. Coal Slurry Net Costs to Electric Power Consumers

a. Factors to be assessed in estimating net benefits or losses to utility ratepayers include:

- (i) Construction costs, including borrowing costs, costs of adequate environmental equipment, and over run costs, if any;
- (ii) Operating costs and income levels based on pipeline duty factors;
- (iii) Feedback effects on coal costs;
- (iv) Rates of inflation in rail hauled steam coal;
- (v) Possibility of losses to power consumers due to long term contracts or rate base pass-through of slurry associated losses or losses to other consumers due to increased rail tariffs on other goods;
- (vi) Long term trends in demand electricity in the power grid and patterns between coal purchase contract duration for rail-hauled versus slurry-hauled coal.

### 2. Construction costs

a. Opponents believe that Bechtel underestimates construction costs. To illustrate, they use Bechtel sensitivity analyses in a matrix to show the impacts of various hypothetical overrun percentages upon the costs of slurry-delivered coal. To make such a matrix useful, one needs to know how frequently and by what amounts pipeline projects, and new but non-nuclear projects, actually have cost more or less to construct than was estimated.

Bechtel utilized engineering data and costing of components done for the ETSI project. They believe that their 12% contingency allowance is realistic.

According to a recent Bechtel survey (via H.E. Ragsdale, Houston Office) of 20 domestic large scale mineral and mining projects, the average percentage difference between costs experienced and advanced stage engineering estimates was -0.5% (minus one half of one percent), with a statistical variance

of 4.4%. Recent large gas transmission lines, "Trailblazer" and "Northern Natural" were both brought in under projected costs. A recent \$2 billion coal gasification plant, the "Great Plains", was brought in slightly under projected cost even though the technology is new. According to Mr. Robert Landers, Assistant Chief Engineer for Natural Gas Pipelines of America, his company traditionally uses 5% contingency margins, and the pipeline industry generally uses contingencies smaller than 10%.

Opponents challenge the Bechtel cost estimates (for example, number of pumping stations required, water treatment facilities). Taken collectively, these asserted corrections run total project costs upward by \$246 to \$291 million. Engineering/pricing details of opponents have not however been stated in ways that allow staff to make ready comparisons of competing assumptions.

Bechtel estimates borrowing costs at 11% whereas opponents believe that a minimum of 14% would be more appropriate. Present borrowing rates are closer to the opponent's estimate. Recent prime rate changes were reductions, so that the present trend in borrowing rates is in a direction favoring proponents. If borrowing costs dip sometime in the earlier portion of the (6 + 25 year) project, presumably some of the debt can be refinanced at a lower rate than initial ones. Swings in long term borrowing costs are among the imponderables of this and other projects. Major projects are nonetheless commencing every day.

### 3. Operating Costs

- a. Opponents claim that more realistic operating costs would add approximately \$8 per ton to slurried coal. Opponents' cost and engineering figures are stated, but typically are not explicitly developed in ways that allow checking of main computational assumptions.

On issues where the respective validity of each side's cost computations is deemed critical, the Committee could require formal written technical documentation from both sides.

- b. Opponents question whether markets exist for 15 MTY of slurried coal. Proponents estimate use of 3 to 4 MTY by BG&E and 4 to 6 MTY by VEPCO, leaving presently unresolved the disposition of roughly 1/2 of the pipeline load. Proponents do not intend to do vigorous marketing until they believe they have a product to sell, and more detailed cost profiles (from detailed engineering studies, which in turn are awaiting resolution of the eminent domain issue.)

Opponents have noted the absence of foreign markets for slurried coal, owing to lack of European slurry dewatering plants. Dewatered coal from the proposed dewatering plant would have only a few percent higher moisture content than conventional coal and could be handled, perhaps with minor modification, by European dockside and boiler feed equipment. Coal sold abroad in any particular year would depend on such factors as strength of the dollar, and labor conditions in other exporting countries. Long Term contracts (driven both by availability and affordability concerns) would tend to be less inflation-prone for slurried (capital intensive) than for railed (labor intensive) coals.

4. Would lowered transportation costs, if realizable, result in lowered consumer costs or higher mining profits?

Opponents maintain that a slurry pipeline could not compete with rail in open competition, but go on to state that even if transportation costs are cut or contained by slurrying, coal companies would raise prices and thereby absorb any potential savings to consumers.

The free market checks and balances would include competition from foreign coal, between rail lines and slurry, and between the percentages of purchases via long term contracts versus the spot market. If a technology like slurry were inherently cheaper, staff would expect consumers and suppliers to split any savings.

Avenues for potential benefit to power consumers are: (1) lowered monthly fuel adjustment costs; (2) lower electric rates if lower fuel costs permit more sales to the power grid, thus spreading the amortizing costs of coal-fired plants; (3) lower borrowing costs for future power plants if internal capital were generated by a successful pipeline.

Utilities, knowing long term delivery rates (via slurry) in advance, could lock onto longer term contracts for part of their demand, thereby buffering against swings in spot markets. If spot prices sag, consumers would be locked into higher prices, but conversely, when spot prices spurt, consumers are protected. On average, consumers and producers would be expected to benefit from the stabilizing effect of having a mix of short term and long term contracting.

Fuel costs adjustments presently amount to approximately 25% of residential consumer's (BG&E) monthly utility bills. Savings in coal transportation costs can be scaled approximately from this. For Example, a 10% reduction in transportation costs would translate into a 2.5% reduction per billing, presently. However, what fuel cost adjustments will be in, say, 18 years (midlife of proposed pipeline), with and without a slurry pipeline, is the more germane issue.. Proponent statistics (attached) show that rail rates for coal over the past 14 years have increased in All Commodity deflated dollars by about 35%. This represents an absolute inflation of 391% over these 14 years.

If this pricing trend continues, fuel adjustment charges would tend to raise utility bills at a higher rate than general inflation. Part of the rationale for the pipeline is that anticipated (by proponents) sustained increases in rail rates will provide more robust cost margins to work against. For example, if the annual rate of pipeline inflation is 2% less than railroad inflation (due to lesser labor dependence), over 10 years the pricing differences would be more than 20%. This would be enough to more than make up for construction over runs of a few percent in excess of the planned 12% Bechtel contingency. Will rail rates continue to rise at similar rates for the next 18 years as for the past 14? The answer appears to depend in part on railroad marketing decisions. That is, unit-train delivered coal to Curtis Bay costs about \$2 per ton more if its destined (by barge) to anywhere in the Bay than it costs if its barging destination is New Jersey or Carolina. (One thereby infers that rail tariffs are not tied strictly to costs of service).

5. Are there risks to electric power ratepayers if a BG&E subsidiary becomes a part owner of a coal slurry pipeline?

a. Various scenarios were posed to PSC Commissioner Heintz, including: possible impairment of parent company credit-worthiness (borrowing cost issue) or burdening the utility with long term contracts when spot market rates may dip. The PSC response on these issues was:

(i) PSC must decide, on a case by case basis, whether the type of charge in principle falls within the rate base.

Pipeline operations categorically were not entitled to access to the utility rate base. On other items arising at the interface between utility and pipeline operations full and careful scrutiny is needed and expected.

(ii) As a further decision (distinct from questions of adherence to policy criteria), the PSC, or perhaps some judiciary body, must decide such practical matters as whether the costs incurred were in part or wholly consistent with sound technical practice and prudent financial management. For example, if a utility bond rating suffers as a consequence of pipeline involvement, the PSC would have technical means for determining these costs if it determined to disallow them from the rate base.

Cochairman Dorman posed the question of catastrophic failure, wherein a non-PSC regulated subsidiary pulls a utility so deeply into debt that the PSC is confronted with the choice of seeing the utility fail or else reluctantly saddling consumers, by necessity, with bail out costs. The PSC did not speak directly to this scenario. As a practical matter, BG&E involvement to nominally 1/4 ownership (\$150 - \$200 millions) has been mentioned. This level of involvement is equivalent to annual BG&E construction budgets, and is not in the same category as, say, \$2 billion plus nuclear power plants that have imperiled other utilities. Conversely, if a pipeline venture were successful, the parent company would benefit and when (in the future) a new power plant were needed, more internal capital would be available (thus reducing the future borrowing costs ultimately borne by power consumers).

## 6. Stimulation of Maryland Coal Mining, Exports, and Competitive Posture in Energy-Intensive Manufacturing.

- a. Maryland's coal is used for both steam generation and metallurgical purposes. Overseas demand fluctuates, depending on international conditions. Design of the proposed pipeline calls for about 6-7% of the slurry to originate from Maryland mines (roughly one million tons per year). Batching of fluids (say W. Virginia coal one week, Maryland coal the next) should be technically feasible, but staff cannot assess to what extent a slurry pipeline would spur Maryland coal exports. We defer on this issue, and on economic ripple effects, to the upcoming DECD report.

Cost of electric power is a factor influencing decisions of companies to locate in Maryland or to retain Maryland production. However, energy costs are just one of a host of factors (including tax structure, labor skill and costs, pollution standards, transportation networks, educational/recreational opportunities, etc.) affecting such decisions. Staff defers to the upcoming DECD report on assessing the likely impact of a slurry pipeline on regional industrial development.

One incontestible feature of the competitive costs of slurry versus rail transportation of coal is that projections of these differences 18 years into the future contain considerable inherent uncertainty. There are strategies for minimizing risks due to uncertainty. One is to maintain course until the picture (betting odds) clarifies. But holding course may make corrections too late. Another strategy is to diversify. Here, diversity would mean possessing both a labor intensive system, but one capable of ready expansion (railroads) and a slurry pipeline (less labor intensive, with fixed capacity).

There is also more immediate risk-taking involved in the present decision making. If Maryland does not give eminent domain, and Virginia does, then Maryland would lose both railroad jobs, and slurry pipeline jobs (and maybe coal-mining jobs) and public revenues and utility customers would pay the extra bargaining costs to bring dewatered coal up from Hampton Roads.

Risk taking can reward as well as penalize. Opponent testimony cited expensive nuclear plant failures elsewhere. Staff recalls recent BG&E estimates that Calvert Cliffs has saved Maryland consumers more than \$3 billion to date in fuel cost adjustments (e.g. more than the constant dollar cost of that plant).

## 7. Some Policy Questions

- a. What criteria should the State apply in deciding whether or not to mediate between two private sector interests vying to provide the same service to the public? Do gas and oil pipelines afford precedents, since LNG and oil also travel by rail (as well as by truck and by barge)? If gas and slurry pipelines are inherently different from a regulatory viewpoint, what policy-wise are the key differences? (Public safety risks are a concern for gas pipelines according to opponents' testimony.)
- b. If State policy seeks to minimize interference with private business, in this case would such minimization amount to retaining the status quo, or, to the granting of equivalent eminent domain rights to slurry pipelines?

### III. SOCIAL

#### A. Employment Impact

##### Overview

It is fairly straightforward to project the total number of slurry pipeline construction jobs, but multiplier effects and worker immigration ratios are "soft" numbers. Net job impact of a pipeline during its operating phase is difficult to predict because the number of railroad jobs "lost" (that is, actual layoffs plus new jobs that will not materialize) approximately equals the number of slurry-related jobs that will be created. There will certainly be dislocations even if the net change in number of jobs statewide were to balance out to zero. The actual net job change will be sensitive to export and domestic marketing of slurry, overall behavior of coal markets, pace of railroad productivity changes, and other factors.

##### Construction Phase:

Pipeline construction, which would take 2 - 3 years, would provide a significant number of new jobs in Maryland with no adverse impact on railroad jobs.

The proponents have estimated that Maryland plus West Virginia pipeline construction will employ 2,500 people directly. Opponents have not challenged this figure. Multiplier effects would create some 1425 additional jobs, or according to opponents, some indeterminate number.

To estimate the impact of pipeline construction on Maryland employment, we scale by the proportion of total construction funds to be spent in Maryland. On this basis, the table on page 33 leads us to estimate that approximately 50 percent of direct construction costs, and hence 50 percent of construction-related employment, would occur in Maryland. Therefore, of the total 3,925 direct plus indirect jobs, we expect roughly 1,963 would be in Maryland. This is still a gross approximation but should be more realistic than estimating the Maryland-employment impact solely on the basis of pipeline mileage (opponents' approach). The particular construction firms contracted and migration of skilled construction workers will influence the number of Maryland residents actually employed due to pipeline construction, and thus precise estimates are not feasible at this early stage.

##### Operating Period (Long-Term Employment):

The primary factors which will determine the net employment impact of the pipeline's operation include:

1. Direct employment of personnel to operate and maintain the pipeline and transloading facilities;
2. Impact on Western Maryland coal production;

3. Induced employment in other industries through lower utility rates;
  4. Impact on port jobs;
  5. Impact on railroad jobs; and
  6. Indirect employment associated with the above impacts.
1. The proponents estimate that pipeline operation will require some 310 permanent employees, of which about 200 will be for jobs sited in Maryland. The opponents feel this projection is overstated and contend that only about 100 new jobs will be created in Maryland. Based on data from the Black Mesa pipeline and other evidence, we estimate that 115-160 Maryland jobs directly related to the pipeline, plus an additional 90 jobs at the barge facility, would be created. While our estimate implies a lower number of personnel for the whole pipeline than projected by Bechtel, it likewise implies lower operating and maintenance costs.
  2. An increase of one million metric tons per year (MMTPY) in Western Maryland coal production presently creates about 300 new jobs in the industry. Proponents of the proposed pipeline believe that the lower transportation costs presented by the pipeline will enable Maryland coal producers to mine and sell an additional one MMTPY (an increase of 25-30 percent over recent production) and create 300 new jobs. Opponents project no production increase and thus no employment increase, because they believe a pipeline would not be cost-effective.

We feel that an increase in Maryland coal production, with an attendant increase in employment, is possible if lower coal transportation costs are afforded by a pipeline. The magnitude of the increase, however, is speculative, owing to the many uncertainties that will influence how differential transportation costs affect demand and production.

Like most coal producers in the region, Maryland coal producers will find that lower transportation costs enhance the competitiveness of their coal in domestic and export markets. Moreover, the potential transportation-cost benefit to Maryland producers may be among the greatest since most Western Maryland coal is not hauled via long-term contract rail rates (the lowest rates) and since many small producers in Western Maryland cannot meet the requirements (7,000 tons, 24-hour loading) for unit-train rates; they therefore must pay single-car rail rates, which are up to 30 percent higher than unit-train rates.

The limiting factor may be the growth rate of accessible users, though there are indications of some growth in coal-fired utility capacity on the eastern seaboard through the 1990's. Even without market growth, however, Maryland producers may face losing existing markets due to tighter requirements for unit-train rates.

Western Maryland coal producers, who currently export about 45% of their coal, also look to the export market (primarily Europe) for a significant portion of their future sales. In recent years, the export market has been depressed largely due to economic recession and an extraordinarily strong U.S. dollar. In the 1990's, when the pipeline could begin transporting Western Maryland coal, we anticipate that stronger economic activity, a significantly weaker dollar, and expanding European demand for steam coal will provide a much larger potential market for Western Maryland coal. Maryland coal will be competing for markets with foreign producers, and mine-to-port transportation costs may hold the edge.

Rail transportation costs now account for up to 35 percent of the cost of Maryland coal reaching Europe. If current trends continue, rail costs could rise to significantly higher proportions of total costs and help push Maryland coal beyond what European buyers are willing to pay for fuel from a reliable supplier. Given that pipeline rates are likely to be more resistant to inflation than rail rates (due to substantially lower variable costs, such as labor) and that Maryland coal generally is now hauled via relatively high rates, the pipeline may tend to restrain the cost of transporting Maryland coal to Europe and thus help make Maryland producers more competitive in the European market. The extent to which lower transportation costs may lead to increased coal production in Western Maryland will depend upon, in addition to the factors cited above, the price offered by competitors, such as South African and Australian producers, some of whom are government-subsidized and may act to undercut price advantages gained by American producers.

Indirect employment related to new mining jobs and mining activity are uncertain even when the number of direct jobs is precisely known. We defer to DECD's analysis for a possible indication of potential indirect employment.

In summary, a pipeline-induced increase in Maryland coal production of one MTPY, with an attendant employment increase of 300 people, is not implausible but cannot be predicted with reliability. An increase in mining employment and activity will also lead to new indirect jobs.

3. To the extent that the pipeline or its proposed construction has the effect of lowering utility rates, there will be an induced increase in Maryland employment. If rates for electrical power were lowered, businesses and industries would tend to hire more labor, plus Maryland may become a more attractive location for business.

The econometric-modeling results presented in testimony by proponents crudely represent the magnitude of this potential induced employment. Under the scenario that rail transportation costs rise eight percent annually and pipeline transportation costs rise six percent annually, the model projects that some 474 new jobs would be created in Maryland in 1990, with the number of jobs increasing each year thereafter to a level of about 911 in the year 2010. These projections, however, are probably highly speculative and embody numerous unreliable assumptions, the most crucial of which may be the utility rate itself. Hence, we regard these projections cautiously. Though absolute numbers are difficult to project, so long as rail rates escalate faster than pipeline rates, the number of potential new jobs will continue to grow since the actual rate differential will continue to increase.

4. The impact on port facilities around Baltimore will depend on the level of coal exports through Baltimore. Opponents contend that a pipeline would merely divert existing coal traffic from Curtis Bay, resulting in the loss of at least 81 current jobs. This projection, however, assumes a diversion of at least 12 MMTPY from existing rail traffic through Maryland (a portion of which is handled at Baltimore ports), whereas much less, if any, port traffic may be diverted. (It is projected that most of the slurried coal would go to domestic utilities. Portions for export may be barged to Baltimore for transloading onto deep-water vessels.) Moreover, it assumes no future increase in overall coal export traffic, part of which would offset diversions to the pipeline. The diversion of coal traffic from non-Maryland railroads to the pipeline, along with possible increases in export demand, may increase port activity and employment. We cannot offer a quantitative estimate here, but generally, we anticipate little negative impact on port jobs due to the pipeline, and port jobs may increase with growth in exports.
5. Opponents of the pipeline have contended that it would cause the elimination of nearly 1,400 railroad jobs. This figure, however, embodies several invalid assumptions. On the basis of a projected diversion from current Chessie rail traffic in Maryland of approximately 2.5 MMTPY, we believe that the number of current Maryland railroad jobs lost may be as high as 300 on the Chessie System. An additional diversion and subsequent loss of railroad jobs may occur on Conrail lines as well, but we have no projection of these losses. The majority of coal ton-miles in Maryland, however, is carried on the Chessie system. (See figure on page 34.)

Losses of rail jobs will be of two types. One is actual layoffs of railroad employees. At the time that a pipeline becomes operational and thereby railroads experience a reduction in coal traffic, railroads may decide to lay off persons actually employed at that time. The number of layoffs will depend on other factors as well, such as growth or decline of other rail traffic and productivity increases. The second type of "lost" railroad employment is reduction of future hires. At any time during the operation of a pipeline, if the slurried coal were to be put on rail lines instead, railroads would tend to hire additional new employees to handle the increased traffic. However, because that same coal is transported via pipeline, those potential new employees would not be hired by the railroads. (They may be employed elsewhere, including in pipeline-related jobs.) Hence, due to the pipeline, there would be fewer railroad employees even though no actual layoffs occur. This discussion is to point out that the impact of a pipeline on railroad employment is not limited to actual layoffs and that the number of layoffs that do occur will depend on other factors in addition to the amount of coal traffic diverted from railroads.

It is important to measure the impact on total Maryland railroad employment in relation to a no-pipeline baseline. The impact would depend substantially on a pipeline's effect on demand for Appalachian coal. If a pipeline stimulates increased production, and hence increased total coal traffic, a portion of diverted railroad traffic would likely be offset by new coal traffic. This would effectively reduce the loss of railroad jobs that would be incurred should there be no increase in total coal traffic. In addition, Maryland railroad employment may decline in future years with or without a pipeline. Reductions in railroad employment may be due to other factors in addition to a pipeline. In recent years, railroad employment in Maryland has tended to decline while tonnages hauled have not declined. If similar trends continue, railroad employment in Maryland may decline by as many as 1300 jobs by 1991 without a pipeline.

No estimates of indirect employment effects from the impact on railroad employment have been presented. As an indication, however, DECD estimates that, for transportation industries as a group, a loss of one direct job will cause a loss of 1.3 jobs through indirect consequences.

## B. Rights-of-Way

The Department of State Planning estimates that 86 - 98 percent of the pipeline route in Maryland would coincide with existing rights-of-way. This estimate implies that easements or condemnation would affect approximately 29 - 205 acres in Maryland. The precise number of affected acres (and households and businesses) will not be known until definitive engineering is completed.

The Western Maryland pump station and preparation plant will require an additional 70 acres. This land may come from existing mining property but may impact farm and forest land. If another pump station is required between Westernport and Baltimore, more land would be required, though presumably fewer than 70 acres since no preparation facilities would be needed.

The dewatering plant and barge facilities are estimated to require about 200 acres of tidal wetlands in Anne Arundel County. Part or all of the land may come from current Baltimore Gas and Electric (BG&E) property, but site-specific information is not available.

From an economic viewpoint, sale and relocation of households and businesses may stimulate segments of the economy. Owners of affected land would receive at least fair market value for their property. In some cases, easements may be obtained with only temporary disruption of current land use. We believe that condemnation may facilitate some desired relocations as well as cause undesired dislocations. We cannot at this time estimate the psychological or other impacts of potential dislocations.

## C. Tax Revenues

The projections of state and local tax revenues presented by proponents and opponents appear to contain a number of discrepancies. We have not undertaken an extensive analysis of this question but defer to the forthcoming analysis of DECD.

## D. Policy Questions

1. Should State policy, as well as market and technological factors, mold future patterns of Maryland employment? If jobs are retained, or are eliminated, directly as a result of governmental action, or lack of action, who does, and who should, bear the costs?

2. Can Maryland assess the probability that a slurry pipeline will be built in Virginia, thereby losing both railroad and pipeline jobs from Maryland?

PROPOSED COAL SLURRY PIPELINE**Estimate of Direct Capital Expenditures on Facilities in Maryland  
(Based on Bechtel Report)**

	Low Estimate	High Estimate
	(\$ Mil)	
Water Supply System	0.4	1.2
Preparation Plants	4.2	15.8
Preparation Conveying and Storage	1.2	4.5
Lands and Rights-of-Way*		
Pipeline Construction**	20.7	
Mainline Pipe		
Pipeline Materials		
Pump Station	8.0	
Slurry and Water Ponds	0.5	1.8
Agitated Storage	2.0	7.5
Dewatering Plants	94.0	
Steam Generation Facilities	34.0	
Water Treatment Facilities	5.0	
Slurry Storage Ponds (Dewatering Plant)	8.0	
Conveying and Storage (Dewatering Plant)	12.0	
Barge Loading Facility	5.0	
Control and Communications (1/3 - 1/2)	2.3	3.5
Power Supply	0.4	1.5
Maintenance Facilities (Gilboa and Baltimore)	1.5	
	199.2	224.0
Total Direct Costs (Bechtel Estimate)		495
Minus Costs of: ROWs	7	
Mainline Pipe	79	
Other Pipeline Materials	10	
	96	
		399

Portion of Construction Expenditures for  
Facilities in Maryland

50-56%

-- Includes materials and labor  
except as noted above.

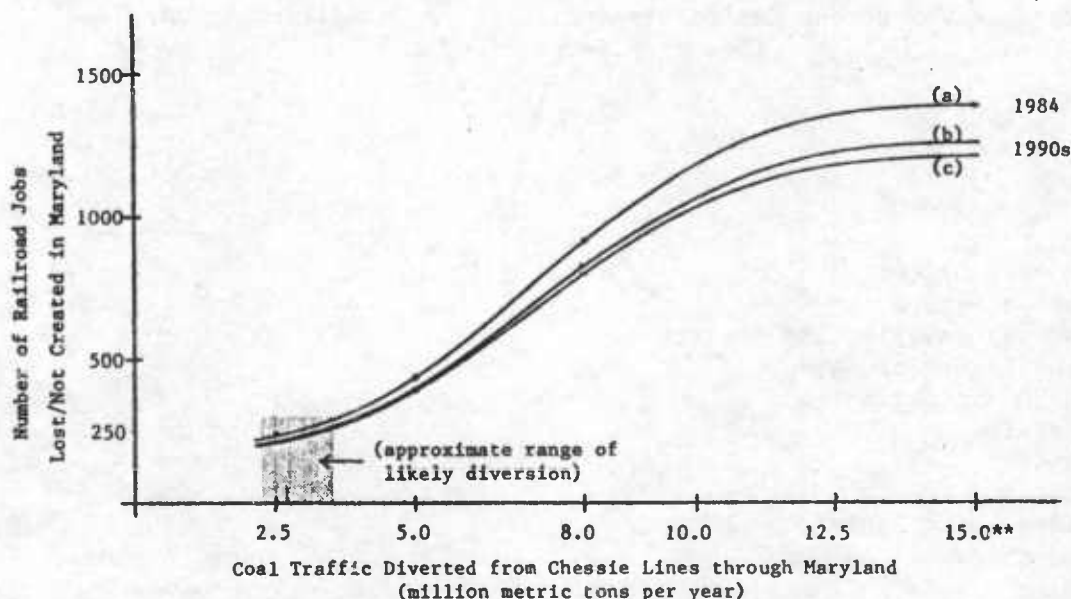
\* Categories not encompassing construction labor are omitted.

\*\* Single-valued categories are readily scaled or are Maryland facilities only.

**Note:** This table was prepared by DLR as an aid in estimating the impact of pipeline construction on temporary Maryland employment.

Impact of a Coal Slurry Pipeline  
on Maryland Railroad Employment\*

(Prepared by DLR)



[Sources of data: Chessie letter of Oct. 12, 1984, to Secretary De Francis (corrected to show impact on headquarters jobs decreased since one fourth or more of pipeline throughput not to be diverted from Chessie System); and, Kearney: Management Consultants, Maryland Coal Pipeline Transportation Impact Study: Executive Summary, October 1984.]

\* Impact on Chessie System only; impact on Conrail not analyzed but is less significant.

\*\* Projected total pipeline throughput; some throughput would be diversions from rail lines not passing through Maryland. (See staff note #4 below.)

(a) Impact indicated in Chessie letter.

(b) Assumes 10% increase in railroad productivity (tons of traffic per employee) and same proportion of jobs affected as indicated by opponents' analysis (Chessie letter). Estimates based on total tonnage and employment data presented in Kearney report.

(c) Same as footnote (b). Assumes 14% increase in railroad productivity.

Staff notes:

1. This figure indicates potential impacts on Maryland railroad employment relative to Maryland railroad employment without a pipeline. Railroad employment has declined in recent years and may continue to do so even if no pipeline is built.
2. The graph illustrates that the negative impact of a pipeline on Maryland railroad employment should decrease as railroad productivity increases in the future, i.e., fewer railroad jobs are affected by equal diversions of traffic.
3. For the purpose of this analysis, no distinction is made between layoffs of on-board personnel and reduction of future hires.
4. Opponents often refer to a diversion of 15 MMT of coal traffic. We believe, however, that the diversion from Chessie System traffic through Maryland would be approximately 2.5 MMT.

**APPENDIX C**

**AN ASSESSMENT OF A  
COAL SLURRY PIPELINE  
THROUGH MARYLAND**

**I. Introduction and Summary**

**Prepared by:**

**The Division of Research  
Department of Economic and Community Development**

**(The complete report is available through the Division of Research, DECD)**

**December 7, 1984**



AN ASSESSMENT OF A  
COAL SLURRY PIPELINE  
THROUGH MARYLAND

I. INTRODUCTION AND SUMMARY

The Division of Research of the Department of Economic and Community Development has conducted an assessment of the proposed coal slurry pipeline running from southern West Virginia to Baltimore. We have mainly limited our analysis to an examination of the Bechtel report (Bechtel Petroleum, Inc., "Coal slurry Pipeline Feasibility Study: Final Report", June 1984) prepared for the Baltimore Gas and Electric Company (BG and E) and the material submitted to us by the Chessie System. In addition, we have talked with representatives of BG and E, the Chessie System, the U. S. Department of Energy and other State and federal agencies, and we have reviewed much of the literature on coal slurry pipelines.

The focus of this report is the direct impact which a coal slurry pipeline could have on permanent employment and utility rates in Maryland. We examine a number of complementary issues during the course of our research, the results of which are also presented in this report. Some background material on coal slurry pipelines is presented first.

We have attempted to be conservative in developing our estimates of the impacts of a coal slurry pipeline. Our strategy has been to use the lowest reasonable benefits for the pipeline and the highest reasonable costs to the railroads.

Our major conclusions are:

APPENDIX C

1. The pipeline can be expected to create approximately 290 permanent new jobs in Maryland (excluding Maryland's coal mining sector), but up to 424 permanent railroad jobs could be lost. The net impact, without adjustments for changed employment in Maryland's coal mining sector, is a loss of 134 jobs of which 24 are likely to be in the Baltimore area and 110 in the rest of the Maryland (mainly in western Maryland).
2. An increase in the demand for western Maryland coal of 0.4 MMTYPY, resulting from the operation of the pipeline, would be sufficient to eliminate the net employment losses in the "rest of Maryland"; an increase of 0.5 MMTYPY would be sufficient to eliminate the net employment losses throughout the State; and an increase of 1 MMTYPY would be sufficient to create a net employment gain of 136 jobs in Maryland.
3. An average of 1180 temporary construction jobs would be created in Maryland during a pipeline's three year construction period; many of these new jobs would go to Maryland residents.
4. The net present value of the savings in electricity bills to BG and E customers is likely to be \$244 million, in 1984 dollars, or an average of \$9.8 million per year. The average annual savings are approximately 0.9 percent of BG and E's total electricity revenue in 1983, adjusted to 1984 dollars. The average annual savings also represent 5.4 percent of the fossil-fuel costs for BG and E. These savings are too small to induce any significant increase in employment in Maryland.
5. Locating the start of the pipeline in southern West Virginia means that the pipeline should have little difficulty in obtaining the coal needed to operate it at capacity because of the exceptionally high quality of the coal there. Among other reasons, the coal for BG and E's Brandon Shores facility and for most of VEPCO's coal-fired facilities comes from southern West Virginia. This origination point also means that many of the negative impacts of the pipeline would be borne by Virginia, while many of the positive impacts would accrue to Maryland. If the pipeline were to originate in central West Virginia, which was the starting point early in BG and E's deliberations, many more negative impacts would be felt in Maryland.
6. The costs of constructing and operating the pipeline appear to be as accurate as possible given the preliminary stage of the project. It also appears that the pipeline's feasibility is relatively insensitive to increases in capital costs, interest rates and similar phenomena.

7. The prices that the pipeline charges will depend, among other things, on how it is regulated. Regulation of the operation of the pipeline could result in higher pipeline prices than those for non-regulated pipeline operations.
8. Pipeline prices have to be compared to rail prices. If the railroads decrease their prices because of competition from the pipeline (even before the pipeline is actually built), the utility bill savings will be different from those we have calculated. The extent to which the railroads are able or desire to reduce their coal transportation prices is unknown.
9. The passage of eminent domain legislation for coal slurry pipelines will foster competition among transportation systems. Without the legislation, there now exists no impetus to change from the status quo. The evidence we have demonstrates that the existence of competition, or the potential for competition, is necessary at this time to hold increases in the cost of coal shipments by rail down and, therefore, to lower the expected rate of increase in electricity costs.



**APPENDIX D**

**PROPONENT ARGUMENTS**



## COAL PIPELINE DIALOGUES

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DIALOGUE #1

COAL RAIL/PIPELINE RATES

Central West Virginia to Curtis Bay Rate Comparison

Proponents: \$15.42 per ton by rail, including fees for weighing and barge compared to \$12.60 per ton, fees included, by pipeline, a \$2.82 difference. Base 1984 rates. (Published rail tariff rates, Bechtel.)

Opponents: Proponents have used a single car rate, not a unit train rate which is considerably cheaper.

Proponents: The rate is a representative composite of published unit train rates.

Opponents: These published tariff rates are substantially higher than the Baltimore Gas & Electric Company's contract rate.

Proponents: Contract rates are confidential. However, rate comparison at one point in time is only part of this issue; must also look at the inflation resistance of pipeline operations vs. rail.

Opponents: Proponents have included weighing and dumping fees in their analysis of rail rates. Without these fees \$14.85 is the single car rate from Central West Virginia to Curtis Bay via B&O.

Proponents: The pipeline rate of \$12.60 also includes weighing and transfer (dumping) to barge. See Bechtel, p. 4-15. Even if you include weighing and transfer to barge in the pipeline rate, and not in rail, the differential is \$2.25 per ton.

Opponents: The \$12.60 estimated pipeline rate in the Bechtel Report is not realistic and among other things does not include:

(a) Gathering costs (\$1.58 to \$1.95 per ton) (Lebo & Associates, Inc.)

Proponents: Not true. See Tables 4-2 and 4-5 on p. 4-8 and p. 4-13, respectively, of Bechtel. \$34.1 million is gathering cost. Lebo's gathering cost figures are based on the assumption that all gathering is by truck. This would not be the case, unless this is a threat carried out by the railroads.

- (b) Storage costs at terminal (Lebo & Associates, Inc.)

Proponents: Storage costs are included in budget items entitled: Indirects, Operating, Maintenance, Labor, and Supplies. See Table 4-2 on p. 4-8 and Figure 4-1 on p. 4-12 of Bechtel.

- (c) Washing of part of coal at up to \$5/ton (Poindexter) (Lebo & Associates, Inc.)

Proponents: Poindexter quoted out of context. Well over half of all BG&E's coal shipped by rail is washed.

- (d) The weighing or dumping fees which have been included on proponents' statement of the rail rates.

Proponents: The two fees are included in the pipeline rate. Bechtel p. 4-15.

- (e) Loading and distribution costs at destination (Lebo & Associates, Inc.)

Proponents: Includes transfer (loading) to barge. Distribution costs are not now included in rail rates; therefore base rates are the relevant comparison.

- (f) Probable cost overruns as shown in Table 9 of opponents' separate attachment.

Proponents: Bechtel includes a contingency of 12%, see p. 4-2. No basis for extraordinary cost overruns from pipeline data sources; opponents' estimates based on speculation alone.

Rail Rates from West Virginia to Baltimore Compared to Rates from West Virginia to Hampton Roads, Virginia, to Baltimore by Barge

Proponents: Higher. (Poindexter; Vrooman)

Opponents: The all-rail charges from Southwestern West Virginia (or Kentucky), where Baltimore Gas & Electric has opted to buy its coal for Brandon Shores, to Baltimore are higher because of terrain problems which limit the number of cars on that route.

Proponents: If so, and a pipeline is cheaper, then a pipeline is more appropriate.

Opponents: The B&O rates from the present area in central and northern West Virginia from which BG&E purchases coal for its Wagner plant (and in which Potomac Electric Power Company makes spot market purchases), to Baltimore, are lower than the rates from southwestern West Virginia (or Kentucky) to Hampton Roads.

Proponents: Not relevant. There are only limited supplies of coal with the proper sulfur content in this area. It is meaningless to have a lower rate, but no coal to ship.

Opponents: In the Bechtel Report presented during the 1984 General Assembly Session the pipeline was supposed to originate in the central and northern West Virginia area where the B&O rates to Baltimore are lower.

Proponents: False; coal source was never anything but southern West Virginia and Western Maryland.

#### Rail Rates from Cumberland, Maryland, to Baltimore Compared to Rates from Baltimore to Europe

Proponents: \$14.65 per ton, 150 miles, compared to as low as \$7.00 per ton from Baltimore to Europe. (Oberhaus)

Opponents: Comparison of rail rates with water rates to Europe is totally irrelevant, particularly since the water rates also far exceed the estimated pipeline rates.

Proponents: Also, see U.S. House of Representatives Subcommittee document submitted to the Committee on South African and Australian transport to U.S. compared to U.S. rail transport.

Opponents: The only relevant comparison is the actual rail rates compared to the correctly estimate pipeline rates. See Table 9 of opponents' separate attachment.

Proponents: Opponents' estimates are not based on any historical pipeline or coal pipeline construction and operating experience.

#### Baltimore Gas & Electric Rail Rates

Opponents: Contract rates with Baltimore Gas & Electric Company are substantially lower than the published tariff rates, thus rendering inappropriate the comparisons made by proponents as to the relative rate levels (Poindexter) (Yocum) (Cooke).

Proponents: Contract rates are confidential due to the railroads' no disclosure clause. However, comparison of today's rates only misses the major point of the inflation resistance of a more capital-intensive mode of transportation.

DIALOGUE #2

COAL FREIGHT RATE INCREASES/PIPELINE RATE INCREASES

Western Maryland to Baltimore

Proponents: 32% increase, 1980-1984, based on actual dollars. Published tariff rates (Vrooman).

Opponents: See contract rates below.

BG&E and PEPCO Combined Freight Rate Increases

Proponents: 34.4% increase, 1979-1983, based on actual dollars. Rail transport as a share of total price increased from 23% to 30% from 1979 to 1983. (Lower)

Opponents: See contract rates below.

Contract Rates

Proponents: BG&E's high contract rates are increasing at the same high rate as tariff rates. (Vrooman)

Opponents: Since 1982 tariff rate increases have been moderate. While contract rates are confidential between the parties, proponents say that contract rates increase at the same rate as tariff rates. On January 1, 1982, tariff rates on domestic coal transportation increased 4.7%; on January 1, 1983, tariff rates on domestic coal transportation increased 1% and that increase was later cancelled; on October 9, 1983, tariff rates on domestic coal transportation increased 1.2%; on January 1, 1984, tariff rates on domestic coal transportation increased 4.1%; and on July 1,

1984, tariff rates on domestic coal transportation increased .4%. The tariff rates will not increase again prior to January 1, 1985; therefore, over three years the rate increased a total of 10.4% which is an average of less than 3.5% per year, below the average cost of inflation over the same period.

Proponents: The measurement of rates 1982-1984 is inappropriate because it includes the time period of the deepest part of our recession. The 1982-1985 period is good for measuring monopoly power, however, because it shows rail rates continuing to rise, instead of falling, in a recession. The appropriate periods of measure are 1) 1979-1983, which measures what has happened since Staggers, and 2) 1976-1983, which measures what happened after the Arab embargo.

#### National Rail Rate Increases

Proponents: Rail rates have increased faster than inflation and the Producer Price Index, tripling in the period from 1972 to 1982. The Rail Freight Rate Index for coal averaged 12% per year; the Producer Price Index, 9.7% per year. Contract escalation clauses are tied to the Rail Freight Rate Index in the West Virginia/Maryland/Virginia area. 1969 = 100. (Based on Rail Freight Rate Index, Bureau of Labor Statistics -- Bechtel.)

ICC: The ICC does not collect its own rate information for determining rate increases, but uses instead the Rail Freight Rate Index developed by the Bureau of Labor Statistics, though they do think the index should be revised to better reflect long-haul Western movements. With that caveat, the ICC found that national coal rail rates had increased by 25.8% between 1980 and 1982. 1969 = 100. (Letter from the ICC to the House Committee on Public Works introduced into testimony by George Eatman, Executive Director, Slurry Technology Association.)

Federal Railroad Administration: Rail rates have tripled for the period 1972 through 1982, rising from \$4.00 to \$12.00 per ton for the period, but have risen only by 6% a year since 1981 and only as inflation has risen. Did not give sources for rail rates or inflation rates. (Till)

Opponents: To illustrate the comparative increases of rail rates and mine mouth coal prices, Frank Wilner, in his testimony, included Appendix 1 and Appendix 2 which for convenience of reference are attached hereto.

#### Proponents:

- (a) The deflators used by Wilner for freight rates and mine-mouth prices appear to be different, providing no comparison. Apparently what was done for coal freight rates was to compare (deflate) them against (by) the total railroad freight index, which is inappropriate. The comparison (deflation) should have been against (by) the most general wholesale index, as apparently was done for mine-mouth prices. See Proponent Appendix 3. For rail rates and mine prices deflated by the GNP deflator, see Proponent Appendix 4.

(Proponents, continued)

- (b) 1972 as used by Wilner is a non-representative base year. See Proponent Appendix 5 for 1976 as a base year.

#### Proposed ICC Rulemaking on Rates for Captive Shippers

Proponents: Under the proposed rule, railroads will be allowed to raise rates to "captive" shippers by 15% per year over inflation up to the "stand alone cost" of the shipment or the "revenue adequacy" of the entire railroad company. (Ed Mitchell)

Opponents: Railroads have not even approximated the 15% per year figure allowed. The railroad industry's position is that the Interstate Commerce Commission should not continue the 15% per year over inflation, and the ICC has a duty to investigate in all appropriate cases. As a general rule, an increase of 4% over inflation should be used as an appropriate level at which an investigation is triggered.

Proponents: The proposed rule is 15% per year over inflation. Due to "captive shipper" petitions, recommending a 4% ceiling, the ICC is reviewing a 4% trigger, but even it has not to date been accepted by the railroads.

#### Gauge of Railroads' Financial Health

Proponents: Revenue adequacy for the railroads is based on their calculated rate of return on investment, which is based on replacement cost, not on original cost as all other industries' rates are calculated. This method understates the financial health of the railroads.

Wall Street assessments and merger activity are better indicators of their financial health.

To compare replacement cost methods with original cost methods is to compare apples and oranges. (Source, Ed Mitchell)

Opponents: Railroad rate of return on investment (ROI) is calculated on original cost (book value) as all other industry ROI's (ICC revenue adequacy proceedings). Railroad is not a monopoly which is "permitted" a set rate of return on products as is BG&E. The financial position of BG&E is so favorable that it will generate 75% of its 1983 capital needs through internal sources and is seeking to diversify for investment purposes (Talbot) (BG&E Stockholders Report)

Proponents: See Ed Mitchell's testimony for Executive Summary of a report on revenue adequacy written by Ernest S. Robson, III, (202) 293-5886, Multinational Business Services, Inc.

BG&E Rate of Return Calculated on a Replacement Cost Basis

Proponents: BG&E's rate of return on a replacement cost basis is 2.54%. To achieve a revenue adequate standard, consumer rates would increase by 61.6%. (Poindexter)

Opponents: Calculation of Baltimore Gas & Electric Company's rate of return on a replacement cost basis is totally irrelevant in these proceedings. Baltimore Gas & Electric Company is a monopoly with a guaranteed rate of return.

Proponents: BG&E's rate of return is based on original cost and therefore cannot be compared to the railroads' rate of return based on replacement cost. The only way rates of return can be compared is by putting them on an equal basis.

Pipeline Transport/Freight Rate Increase Assumptions and Assessment of the New ICC Rate Standards

Proponents: Pipeline transport tariffs escalate at a lower annual rate than rail due to its capital-intensive nature.

Bechtel calculates rates assuming that rail rates escalate by 8% and 10% per year. This is a conservative estimate (see National Rail Rate Increases). Bechtel assumes pipeline rates escalate by 6% a year, also conservative (see Bechtel, p. 4-19).

Using these assumptions, savings range from \$11 billion to \$23 billion over the 25-year period. (Source, Bechtel Report)

DOE: For the railroads to achieve revenue adequacy by 1990, they will have to increase their rates by 8% per year. (Source, Department of Energy, given in testimony by proponent, George Ecklund.)

Federal Railroad Administration: Rail rates will not increase to 15% above inflation per year. They will continue as they have since 1981, following inflation.

Opponents: Rates of inflation are highly variable and projections for 20 years are not reliable and have never been particularly reliable.

Proponents: All planning, including railroad planning, assumes an inflation rate. Overall it has been reliable, though the inflation accompanying the two oil crises was unforeseen. It is unlikely we will experience another energy crisis of these magnitudes, since we have moved to break our dependence on foreign oil by using coal.

Opponents: The 6% pipeline rate assumed does not include possible escalation or the higher rate for gathering costs by truck which will be 30% of the cost according to the Bechtel Report.

## APPENDIX D

Proponents: The 6% pipeline rate includes escalation of all costs, including gathering by rail, truck, conveyor belt. See Operating and Maintenance Expenses, p. 4-15, Bechtel. Gathering is not limited to only trucks in Bechtel because presently coal is also gathered by rail, which we assume will still be the case.

Opponents: Assumed increase for railroads does not take into account present and possible cost savings due to innovations, productivity increases or decreases in labor costs by more flexibility in work rules.

Proponents: If this is true, the railroads should have no trouble competing (and gathering!). There is no greater incentive to innovate than to have to compete.

Opponents: The initial costs of pipeline transportation used by proponents do not consider the probable cost overruns. (See Table 9 in opponents' separate attachment.)

Proponents: See contingency estimate of 12%, p. 4-2, Bechtel.

### Western Maryland

Proponents: Rail rates presently are being escalated beyond their already high rates due to the new CSX policy on loading and unloading. (James Oberhaus)

Opponents: The railroad policy on loading and unloading is an attempt to help reduce costs for shippers. The railroad has offered to pay a large amount of the cost to the shippers for the alteration of their facilities by means of an "advance and refund provision" which gives an allowance for each car shipped until the cost of the alteration of the facilities is reached. (Yocum)

Proponents: In response to a petition filed by PEPCO, the ICC has ruled after Yocum testified that the railroads must reimburse some of their suppliers. Conversations with members of the Maryland Coal Association indicate little effect is expected, particularly for small producers.

DIALOGUE #3

COAL DEMAND AND PRODUCTION ESTIMATES, DOMESTIC AND EXPORT

Maryland Utilities

Proponents: Total demand by Maryland utilities will double between 1980 and 1995, increasing from 5.7 MMTPY to 10.4 MMTPY. For the same period BG&E will need five times the amount of coal they used in 1980, increasing from 0.8 MMTPY to 4.0 MMTPY. (Lower)

Opponents: Total demand for coal by utilities in the middle Atlantic region, including Maryland, will decrease by 4% by 1993 (Talbot).

South Atlantic States

Proponents: West Virginia, Maryland, Delaware, Virginia, North Carolina and South Carolina's demand for all coal is expected to increase by 84 million tons between 1985 and 1995. (Kearney Report)

By 1995, coal conversions and new plants will increase all South Atlantic utilities' demands for coal by 29.9 million tons per year. (Based on DOE and National Coal Association estimates, Lower.)

Opponents: This data is irrelevant since pipeline proponents have never proposed to service power plants in West Virginia, North Carolina and South Carolina (Bechtel; Vrooman)

Proponents: Relevant. These states are in CSX's service territory.

Opponents: The proponents' statements of a major increase in domestic coal demand is inconsistent with trends for domestic coal consumption. (Talbot)

Proponents: The domestic coal consumption picture is bright. See DOE's long-range projections below.

National Domestic and Export Market

Proponents: The National Coal Association estimates that total production will increase from 782 billion tons in 1983 to 1.1 billion tons by 1995.

DOE: EIA/DOE estimate that total production will increase from 782 billion tons in 1983 to 1.1 billion by 1995. U.S. steam coal exports will more than double, rising from 28 million tons to 58 million tons. (DOE/EIA. Annual Energy Outlook, 1983.)

Opponents: Outlook for increased demand for domestic coal flat. (Talbot) From April, 1982, to March, 1984, National Coal Association revised downward by 358 million tons its estimates for 1995 (see Table 12 in opponents' separate attachment).

Proponents: True. This picture is still bright and does not indicate domestic coal demand to be flat. From 1983 to 1995, U.S. coal production will increase by 346 million tons. See DOE and National Coal Association projections above.

Demand for Coal by Europe

Proponents: Europe is expected to increase its demand by 80% during 1982 to 1993, from 96 to 175 metric tons, for which the U.S. is viewed as the swing supplier. Electric utilities of Europe are seen as the major consumers. (Ecklund)

Opponents: European demand for export coal is highly speculative and subject to masive annual fluctuation. The United States exported 13.2 million tons in 1980; 25.3 million tons in 1981; 21.4 million tons in 1982 and only 13.4 million tons in 1983. (Talbot)

Proponents: Major Western European importers of U.S. coal alone imported 28.2 million tons in 1983. (Source, U.S. Department of Commerce.)

Demand for Western Maryland Coal by Europe

Proponents: Western Maryland coal has no difficulty in meeting European quality standards. Price is the major deterrent. (Ecklund and Oberhaus)

Opponents: "Coal particle size consist" will decrease and coal surface moisture (percentage by weight) will increase making slurried Western Maryland coal less welcome in European markets (Lebo & Associates, Inc.). European users are presently not equipped to handle slurried coal.

Proponents: Coal transported to Europe would be dewatered at the terminal before transport, making the coal very marketable.

DIALOGUE #4

WATER ISSUES

Solids Content of Recovered Water

Proponents: Cadiz: 20 parts per million (ppm) (Halvorsen, former Superintendent); Black Mesa: 20 ppm (Dina, former Superintendent); ETSI CEP: 12.6 ppm (Carroll, Engineer); EPA Standards: 30 ppm (Carroll, Engineer)

Opponents: 98.6% of the coal is removed from the water at Black Mesa, leaving 1.4% in. (Cooke) Additional sources for opponents on this issue are the pictures and slides of the area surrounding the Mohave Generating Station compared with Lake Powell Generating Station introduced by Ira Cooke, August 22, 1984.

Proponents: According to Dina, former superintendent at Black Mesa, Cooke used the wrong set of figures from a brochure he got there. A look at the brochure could decide the issue.

Coal Separation Technology

Proponents: Conventional technology. Closed circuit. Centrifuges first separate the coal from the water, resulting in a coal cake that is sent to the bed dryers. The underflow from the bed dryers is sent to belt filter presses. Remaining filter press solids go back to the dryers and remaining coal fines go to clariflocculators. Fines remaining after the clarifying process are sent back to the belt filter to close the circuit.

Opponents: Separation technology will produce hazardous waste in the form of liquid or solid sludge containing toxic metal, organic contaminants, and coal fines. (Dr. Harris) As additional sources for opponents' testimony, see pictures and slides of area surrounding Mohave Generating Station compared with Lake Powell Generating Station introduced by Ira Cooke, August 22, 1984.

Proponents: This kind of statement should be judged against the operating experience of Black Mesa, Cadiz, and ETSI's test Coal Evaluation Plant. Also, for further information, see additional information submitted by Barbara Carroll at the Committee's request. Pictures taken from a helicopter prove nothing. There will be no sludge.

#### Evaporation Ponds

Proponents: Black Mesa: Evaporates waste water, not coal slurry water, from the Mohave Generating Station. No sludge. (Michael Dina, former Superintendent of Mohave)

Opponents: Evaporates coal slurry water. Produces sludge. (Cooke)  
Additional sources for opponents' testimony are the pictures and slides of area surrounding Mohave Generating Station compared with Lake Powell Generating Station introduced by Ira Cooke, August 22, 1984.

Proponents: Pictures taken from a helicopter prove nothing. The former plant superintendent has testified that the evaporation ponds do not evaporate the slurry water.

#### Water Uses

Proponents: Electric utilities, industrial, agricultural, and municipal water supplies. (Carroll, Texas Eastern Engineer)

Opponents: Other than the possibility of use at Brandon Shores, opponents have not developed any other possible uses or indicated how the water would be transported if it were to be used elsewhere.

Proponents: All possibilities will be explored during the developmental and engineering phases. All have shown to be feasible.

Opponents: In a study produced October 31, 1983, by the Applied Marine Research Laboratory, Old Dominion University, Norfolk, Virginia, for the Commonwealth of Virginia Joint Subcommittee for the Coal Slurry Pipeline Study, it was indicated that it were determined that if reuse of the waste water by the VEPCO Portsmouth Power Generating Station was unacceptable, there were not other uses. Therefore treatment and stream discharge were considered the only means of disposal.

Proponents: The scope of this study applies only to industrial usages in the Portsmouth area. It has no applicability to the Maryland pipeline.

### Brandon Shores Cooling Tower Makeup Water Requirements

Proponents: Water from the coal slurry pipeline could be used as makeup water in the circulating water system at the existing Brandon Shores unit. The closed loop circulating water system there uses 340 million gallons of water a day (mgd). Makeup water, now drawn from the Patapsco River, averages 8 mgd or 2.4% of the circulating water flow rate. The slurry water recovery rate is 7.8 mgd.

When the new unit at Brandon Shores comes on line, the makeup water requirements will be 16 mgd. (Flynn, EA Engineering, Science, and Technology)

Opponents: Waste water will eventually be indirectly discharged into the Chesapeake Bay (Sierra Club) (Friends of the Earth) (Environmental Policy Institute) (Clean Water Action Project) (City Bar Streams) (STING) (Maryland Waste Coalition) (Maryland Conservation Council) (Dr. Harris).

Even in a closed loop system, water has to be changed and some water discharged as the water becomes contaminated through use in the system itself.

Proponents: An NPDES permit exists for discharge of water from Brandon Shores. This would still apply, regardless of the source of makeup water.

### Water Treatment Tests

Proponents: Organics: 2 of the 116 priority pollutants were found in the slurry water; both were from lab cleaning agents. Toxicity Tests: Fathead minnow test. 80% survival in the test; 90% in the control. Metals: Test on 13 inorganics and all 129 priority pollutants; results: only selenium would have to be treated to meet drinking water standards. Biological Organisms: None. (Sources, Organics and Toxics: EA Engineering; Metals: Lehigh University; ETSI Tests: Barbara Carroll.)

Opponents: The final results of the Lehigh University Analysis have not been made available. The results of the EA Engineering Analysis are scientifically inaccurate as control test container was broken and other containers were contaminated.

Proponents: Broken containers do not make results inaccurate if the cause is scientifically determined and isolated. Lehigh summarized their results before the Committee. The conclusion was that water quality was not a problem area. Further tests were held also showing no problems. This write-up will be available soon.

DIALOGUE #5

PIPELINE SAFETY

Coal Pipeline Shutdowns

Proponents: Black Mesa: The pipeline is not purged of coal slurry during or after a shutdown. It is restarted. (Dina, former superintendent)  
Cadiz: Same. (Halvorsen, former superintendent)

Opponents: If a coal slurry pipeline is shut down for a period of time allowing the heavy particles of slurry mixture to settle to the bottom, it is often necessary to purge the line and replace it with water to avoid damage to the line. This is one of the reasons why holding ponds are established at each pumping station along the route. (See pictures of Black Mesa Pumping Station and holding ponds - August 28, 1984 hearing.)

Proponents: The purpose of the dump ponds is to dump coal slurry in the event that it was found that the coal slurry was not stable. This only occurred, to Dina's best recollection, during the 1970 startup of the system. In fact, the dumping ponds are so little utilized that the proposed ETSI system only required a dump pond after its first pumping station and once again only for the dumping of the line in the event that the coal slurry is not stable.

Coal Ruptures and Defects

Proponents: Cadiz: No ruptures or spills in six years' operating experience. (Halvorsen, former superintendent) Black Mesa: One rupture, resulting in two spills, in 14 years' operation. No adverse effects, so environmental agencies agreed that any attempt to remove spilled materials was unnecessary and would be counterproductive environmentally. Cause was operator error and faulty design of safety valve. Design corrected; since then, no problems. (Dina, former superintendent)

Public Service Commission: Unless the coal is mixed with a flammable fluid such as oil instead of water, the U.S. Department of Transportation perceives no safety problem. Corrosion is reduced with improved coatings and cathodic protection to reduce to a minimum corrosion problems. (Source, Bill Checkley, Engineering Division)

Opponents: Potential spills, as well as the environmental effects of the construction of the pipelines can be serious at the point of stream and river crossings. (Save Our Streams, Sierra Club, Clean Water Action Project, Environmental Policy Institute, (Rich)). A spill where the pipeline crosses the Potomac River would be an "environmental emergency." (Poindexter)

Proponents: Poindexter said any spill into the Potomac must be handled promptly regardless of the source. Also, doomsdayers can predict chemical truck spills, derailments, or pipeline problems, but the risks must be fairly evaluated.

#### Pipeline Safety Technology

Proponents: Aerial surveillance, cathodic protection, X-rayed pipe, safety valves. (Bechtel; Dina; Halvorsen)

Public Service Commission: One-call system, "Miss Utility", operating in Maryland, aerial surveillance, cathodic protection, coatings, safety valves, X-rayed pipe. (Checkley, Engineering Division)

Opponents: There are too many questions related to the safety of the pipeline during its operation to allow it to proceed. (Sierra Club, Clean Water Action Project, Property Owners of Orchard Beach, Rich)

Proponents: There has been a combined 20 years of safe coal pipeline operation.

#### Fatalities

Proponents: Cadiz, none. Black Mesa, none.

Opponents: No testimony.

Overall Pipeline Safety

Proponents: No testimony.

Public Service Committsion: Most fatalities and injuries from pipeline operations are caused by the flammable liquids carried by the pipelines.

For 500,000 miles of oil, butane, propane, etc. pipe, there were 76 fatalities and 202 injuries between 1968 and 1982 due primarily to the flammable properties of the liquids. For 1.5 million miles of gas pipe, there were 73 fatalities and 442 injuries, 1970-1982, primarily from flammable liquids. (Checkley, Engineering Division)

Opponents: Maryland has had several serious situations involving rupture of pipelines over the past ten years. (Rich)

Proponents: Were they serious primarily because they were carrying flammable fuels?

## LAND-USE IMPACTS

Data/Issue Identification	Proponents	Opponents	State Government
Right-of-Way Impacts	<p>Minimal. It is feasible to use 90% or more existing rights-of-way.</p> <p>Source: Testimony -- Chris Poindexter.<sup>1</sup></p> <p>The final route is determined after public hearings and PSC, State Planning, and other agencies' examination and approval. The interested builders of a pipeline only submit a route, not approve it.</p>	<p>The route now being considered is only "conceptual" and may or may not originate, terminate, or follow the route map. It is not possible to assess the land-use effects of the pipeline since the mapping is, at best, tentative. There is no way of knowing how closely existing rights-of-way will be followed, if they are followed at all, or if existing rights-of-way are sufficient to allow construction of the pipeline. Much more definitive information must be obtained before the land-use effects can be evaluated.</p>	<p>The impact will depend on how closely existing rights-of-way are followed. It is feasible to build 86% to 98% on existing utility rights-of-way. (State Planning)</p> <p>Percentage of pipeline miles not using existing utility rights-of-way</p>
			<p><u>Jurisdiction</u></p> <p><u>Proposed Pipeline<sup>1</sup></u></p> <p><u>Miles</u></p> <p><u>Acres</u></p> <p><u>Land Uses Impacted by Proposed Pipeline (acres)<sup>2</sup></u></p> <p><u>Agri- Forest</u></p> <p><u>Devel- Wet-</u></p> <p><u>oped lands<sup>3</sup></u></p>
			<p>Garrett Co. 19.4 235 187 48 0 0 0</p>
			<p>Allegany Co. 6.1 74 59 15 0 0 0</p>
			<p>Washington Co. 12.7 154 45 109 0 0 0</p>
			<p>Frederick Co. 20.0 243 45 198 0 0 0</p>
			<p>Montgomery Co. 35.4 430 192 207 31 0 4</p>
			<p>Prince George's Co. 2.6 31 6 0 25 0 17</p>
			<p>York Co. 4.7 57 19 18 20 0 0</p>
			<p>Anne Arundel Co. 12.2 148 85 0 63 0 0</p>
			<p>Baltimore Co. 0.75 9 0 0 0 9 75</p>
			<p>STATE OF MARYLAND 113.85 1,381 638 595 139- 9 2</p>
			<p><sup>1</sup>SOURCE: USGS Maps indicating pipeline route, supplied by MCCT</p> <p><sup>2</sup>SOURCE: DSP, MACI (Maryland Automated Geographic Information System)</p> <p><sup>3</sup>Not necessarily all inclusive; MACI shows wetlands only in grid cells where it is the predominant land use.</p>
Marine Terminal, Preparation Plant, Dewatering Plant.	<p>Minimal for preparation plants, which would use mining property. (Poindexter)</p> <p>More than 200 acres is available for the dewatering facility. Live and dead storage provided, see Bechtel, p. 3-31. Reverse osmosis is not necessary. See add'l comments from Carroll requested by Committee Staff.</p>	<p>Dewatering facility involves at least 200 acres. This may be insufficient since no arrangements exist for the separation/segregation of diff. coal types for storage. Space for treatment at dewatering facility may have to be increased, since even Lehigh U. admits reverse osmosis may be necessary.</p>	<p>More than 200 acres of non-residential land is available near Brandon Shores for dewatering facility. Impact would be less severe for a barging terminal than for a deep-water port since it would involve less dredging. (State Planning, Ed Thomas)</p>
Construction and Eminent Domain.	<p>Short-term. Construction: 3 weeks. Installation rate is: 1-3 miles per day, depending on terrain.</p> <p>Only easements required allowing former use, except new structures.</p> <p>Source: Testimony -- Chris Poindexter, Vice President, Engineering and Construction Div., BC&amp;E.</p>	<p>See Eminent Domain on following page.</p>	<p>Short-term effects, construction.</p> <p>Source: Testimony -- State Planning, Ed Thomas.<sup>3</sup></p> <p>Minimal effects, construction.</p> <p>Source: Testimony, Maryland Public Service Commission, Engineering Division, Bill Checkley.</p>

## APPENDIX D

<sup>1</sup>Vice President, Engineering and Construction, BC&E.

<sup>2</sup>Attorney, Melnicove, Kaufman, Weiner & Smouse.

<sup>3</sup>Deputy Administrator, Maryland Department of State Planning.

(Eminent Domain, continued)

Opponents: With the present uncertainty as to who will build the pipeline and whether or not Baltimore Gas & Electric Company will participate in building the pipeline, use of Eminent Domain is very questionable.

Proponents: The State of Maryland has an excellent regulatory structure to make all the appropriate decisions, regardless of who builds.

Opponents: Since the route, the owner, and the users of any proposed pipeline are still undetermined there is no assurance that the public will benefit in any way from the granting of Eminent Domain.

Proponents: The feasibility study presented is adequate to determine the eminent domain question, which will then allow detailed engineering.

DIALOGUE #7

WESTERN MARYLAND

Opponents: Western Maryland coal will not be added to the pipeline.

Proponents: Could add at least 1 MMTY or more to pipeline. (Bechtel; Poindexter)

Opponents:

(a) Only 5 mines, within Westernport gathering area - (Lebo & Assoc.)

Proponents: The gathering area considered by Lebo is too small. It is common to truck coal 50 to 70 miles in Western Maryland to a rail yard. (Oberhaus)

(b) Western Maryland coal, unlike West Virginia coal, is soft and will produce vast quantities of flour-like "coal fines" which are difficult to handle and extremely expensive to dewater. - (Lebo & Assoc.)

Proponents: The amount of coal fines is a function of the grinding equipment, not the type of coal.

(c) Reserves in West Virginia gathering area so vast, makes no economic sense to add Westernport facility for only 6-2/3% of pipeline volume.

Proponents: Economic development of Western Maryland is important and a factor the railroads have ignored, as their unemployment rates show.

(d) Bechtel has not anticipated any storage or segregation facilities for Western Maryland Coal.

Proponents: Live and dead storage provided for all throughput. See Bechtel.

(e) How often will the flow of West Virginia coal be interrupted to allow for the addition of Western Maryland Coal?

Proponents: The flow will not be interrupted; it will be batched in an orderly fashion.

(Opponents, continued)

- (f) Will the railroads be available and able to handle coal deliveries when Western Maryland coal mines are unable to use the pipeline?

Proponents: Yes. A pipeline is an additional mode of transportation, not a replacement for railroads.

## DIALOGUE #8

## INVESTMENTS/TECHNOLOGY

Consumers

Opponents: Long term take or pay contracts are necessary (Poindexter) which will create risks for the consumers (Wilner), (Talbott):

- If coal costs crops, no flexibility;
- If innovations occur - no flexibility;
- If demand drops, cost rises because of "take or pay" contracts;
- If pipeline fails or not completed, cost must be absorbed by consumers in rate base (see Braidwood article attached) or by lowered credit rating and higher borrowing costs by utility. (Keane) (Talbott) (Wilner)
- Risk that one started, must or will be completed "no matter what" (Talbott)

Proponents:

- 1) Long-term contracts and take-or-pay contracts are not synonymous.
- 2) The terms of a long-term contract determine whether or not consumers benefit. For example, the long-term contract of 20 years the railroad signed with Arkansas Power and Light has saved consumers \$16.4 billion.
- 3) Long-term contracts and contracts similar to the minimum-take contracts signed with railroads today are necessary for pipeline operation. (Poindexter)
- 4) If BG&E stockholders were to invest in a pipeline as a non-utility investment, pipeline costs cannot be passed on to the consumer. (Poindexter) (Heintz) The PSC can also deny any indirect effect on consumers should a lower credit rating result for the utility due to its outside investments. (Heintz)

Technology

Opponents: Technology not proven in operation. Every coal slurry pipeline ever built was point-to-point. Black Mesa - all 5 million tons has one origin and is burned at pipeline terminus. There is no storage of or further transportation of dewatered coal. In proposed project,

(Opponents, continued)

there are several different sources of coal and coal must be dewatered, stored, and then shipped. This has never been done in any coal slurry pipeline operation.

Proponents: A multi-sourced coal pipeline involves combining proven technologies into a single operation, as the transport of oil, its storage and export involved.

STATE REVENUES/INVESTMENTS/SUBSIDIES

PROPOSERS

OPPOSERS

Item/Period	Estimated Contribution by Pipeline Estimates \$ Millions	Current Total Contribution by Railroad Estimates \$ Millions	Contribution by Pipeline \$ Millions	Opponents' Revision of Proposed Estimates	Estimates of Railroad Contributor
Construction Phase (3 Yr. Totals)					
Direct State Tax Impact	9.5	---	9.5	3.15	---
Indirect State Tax Impact	15.0	---	15.0	0	---
Total	\$ 24.5	---	\$ 24.5	\$ 3.15	---
Operational Period (\$ Per Year)					
State Income, Sales and Property Taxes	1.3	8.6	1.3	.43	8.6
Gross Receipts Tax	Not Estimated	Included Above	Not Estimated	Not Estimated	Included Above
Local Property Taxes	6.2	1.5	6.2	2.1	1.5
Subtotal	\$ 7.5	\$ 10.1	\$ 7.5		
State Subsidies	None	8.7 (1985)	None	None	\$10.1
Total Estimate <sup>1</sup>	\$ 7.5	\$ 1.4	\$ 7.5	\$ 2.53	0
New Capital Investment (Total)					
				\$ 200.0	\$ 27.0

<sup>1</sup> Total estimate for pipeline does not include gross receipts tax. Presently in Maryland, utilities pay a 2% gross receipts tax and the B&O Railroad pays 1/4 of 1 percent.

Source: Comptroller of the Treasury, Louis L. Goldstein.

New Capital Investment (Total) \$600.0 \$ 27.0

Sources: For the pipeline investment, the Bechtel Report; for the railroad estimate of an investment in upgrading the Cumberland rail yard, Ira C. Cooke, attorney, Melincove, Kaufman, Weiner & Smouse, in Baltimore.

AS STATED ABOVE, THE SOURCE OF THE STATE REVENUE DATA PRESENTED IS THE OFFICE OF THE COMPTROLLER, NOT THE PROPOSERS. ANY INQUIRIES SHOULD BE DIRECTED TO THE OFFICE OF THE COMPTROLLER.

Answers to Opponent fns 2, 3 & 4.

Fn 1) It is unclear whether the Comptroller measured only the Maryland impact for construction.

Fns 3 & 4) The Comptroller was quite clear that he was measuring only the impact on Maryland

Fn 2) See Proponents' Table 8 on Jobs.

Fn 5) See Comptroller's letter.

<sup>1</sup> Proponents have neglected to inform the Committee that this figure reflects the direct State impact of both West Virginia and Maryland. More than two-thirds of the proposed line and 3 of the 4 preparation plants are in West Virginia.

<sup>2</sup> Proponents have neglected to inform the Committee that this indirect State tax impact must be compared to the indirect State tax impact caused by the permanent loss of railroad employment, construction, and investment. Therefore, this figure is not germane since the loss of indirect State tax revenues from railroad disinvestment and the like would, at a minimum, cancel this figure.

<sup>3</sup> Proponents have neglected to inform the Committee that this figure reflects the taxes of both West Virginia and Maryland. More than two-thirds of the proposed line and 3 of the 4 preparation plants are in West Virginia.

<sup>4</sup> Proponents have neglected to inform the Committee that this figure reflects the taxes of both West Virginia and Maryland. More than two-thirds of the proposed line and 3 of the 4 preparation plants are in West Virginia.

The Chessie System in Maryland is NOT subsidized by the State. To the extent that monies are paid to Chessie, Chessie is operating as a private contractor for the State to provide services that the State has deemed to be socially desirable. Should the State decide that these services are no longer desirable, Chessie would be delighted to stop offering them.

PROponents

JCBS

OPponents

Item	Pipeline Estimates of Jobs Impact of the Pipeline (Number)	Chessie Estimates of Jobs Impact of the Pipeline (Number)	Proponents' Estimates (number)	Opponents' Revisions of Proponents' Estimates (number)	Opponents' Explanation of Opponents' Estimates of Railroad Jobs Lost
Construction Phase (3 Years)					
Direct Employment	+2500 <sup>1</sup>	No Estimates	+ 2,500 <sup>1</sup>	850 [Estimated]	
Indirect Employment	+2750 <sup>1</sup>	No Estimates			
Total	+5250	No Estimates			
Operational Period (20-30 Years)					
Direct Permanent Employment	+ 310 per year	No Estimates	+ 2,750 <sup>2</sup>	Unknown	
Indirect Permanent Employment					
Reduced BGE Price of Electricity	+ 715 per year av. <sup>2</sup>	No Testimony	+ 310 <sup>3</sup> per year	+ 100	
Western Md., 1 MHTPY $\Delta$	+ 300 per year	Doubts Increase			
Transloading Facility	+ 90 per year				
Port Jobs, Export	No Estimate	Increase Unlikely	+ 715 <sup>4</sup> per year	0	
Production $\Delta$	No Estimate	Use by Other Utilities Unlikely			
Other Utility Impact	No Estimate				
Subtotal	+1415 per year	No Testimony	---+ 300 <sup>5</sup> per year	0	
Railroad Jobs loss	None to Minimal <sup>3</sup>	-1400 <sup>6</sup> immediate loss	+ 90 per year	+ 90	
Total	+1415 per year	-1400 immediate loss	+ 1,415 per year	+ 190	
Railroad Jobs Loss	None to Minimal <sup>6</sup>			- 1,400 <sup>6</sup> immediate loss	1,400 <sup>6</sup> immediate loss
TOTAL PERMANENT JOBS - NET LOSS				- 1,210	

<sup>1</sup> Proponents neglected to inform the Committee that these jobs are for the entire pipeline constructions - MORE THAN two-thirds of which is in West Virginia.

<sup>2</sup> Proponents neglected to inform the Committee that these indirect temporary jobs must be compared to the permanent loss of indirect jobs derived from the loss of railroad employment. Therefore, this figure is not germane since indirect effect on railroads would, at a minimum, cancel this figure.

Railroad fns continued on next page.

Answers to railroad fns. (1) The railroad methodology of dividing by 3 is inappropriate. It ignores labor migration. A better approach would be to analyze the direct costs, more than half of which are in Maryland. (2) See fn 1 above. (3) Railroad methodology of dividing by 3 is inappropriate. It ignores the substantial employment impact of the dewatering facility. Dividing Table 4-4 of Bechtel (Manning Schedule) by state jurisdiction is a much better approach. (4) This employment impact is based on empirical data, not assumptions. (5) The employment effect of an additional 1 MHTPY is based on empirical data. See Oberhaus. (6) This fn is a misinterpretation of Bechtel Table 7-1 on p. 7-2.

(DIALOGUE #10, continued)

<sup>3</sup> Proponents neglected to inform the Committee that these jobs are for the operation of the ENTIRE pipeline. - More than two-thirds of the pipeline will operate in West Virginia INCLUDING three of the four preparation plants.

<sup>4</sup> Proponents are assuming that there will be meaningful electric utility rate savings to Maryland customers and that industry will reinvest those savings to create new employment. Further, this figure is not germane, since loss of support jobs ancillary to railroad jobs lost would, at minimum, cancel this figure.

<sup>5</sup> Proponents have not explained how Western Maryland coal would enter the pipeline, how often, at what cost, to whom it would be sold, and how it would be segregated and delivered to the ultimate purchaser. Further, the Committee has not been informed as to whether this represents new coal or a diversion of existing coal from railroad traffic.

<sup>6</sup> While proponents now claim that only 2.7MMTPY of the "Cumberland corridor" Chessie coal traffic begins in the area where the proposed pipeline coal would originate, the Chessie System carries close to 20MMTPY through the Cumberland-Hagerstown area. It is clear from the Bechtel table (7-1) on page 7-2 that the proponents envision NO new sources for the sale of coal but plan to divert existing rail coal and replace it with pipeline coal, therefore reducing by at least 15MMTPY the amount of coal that Chessie carries. Moreover, should the proponents elect to move the pipeline from Western W.Va. to the Buckhannon, W.Va. area [the location of the pipeline origination during the 1984 General Assembly Session] all pipeline coal would then be from the B & O coal fields.

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UTILITY RATE SAVINGS

Item	Pipeline Estimates		Railroad Estimates	
	Electric Ratepayer Savings (BGE Service Territory Only) (\$ Millions)		Electric Ratepayer Savings (Service Territory Not Defined) (Cents)	
Residential, Commercial, and Industrial Customers	47.0 average per year <sup>1</sup>		47 cents per month <sup>2</sup>	
State of Maryland	1.7 average per year <sup>1</sup>		No Estimate	
Local Government	3.8 average per year <sup>1</sup>		No Estimate	
Total	\$ 52.5 average per year <sup>1</sup>		47 cents per month <sup>2</sup>	

<sup>1</sup> These estimates were derived by Baltimore Gas & Electric Company applying the Bechtel Report assumptions to their Kilowatt consumption estimates for residential, commercial, industrial, State and local government customers within their service territory. Assumptions: Rail rates escalate at 8% annually; pipeline rates escalate at 6% annually; pipeline service begins in 1989; life of pipeline, 25 years.

<sup>2</sup> Testimony given by William G. Mahoney, lawyer, Washington, D.C.

Opponents Conservative  
Analysis of Potential Cost  
Over-runs Resulting  
In Higher Ratepayer Expenses

Capital Cost	+20% \$1.10	+30% \$1.65	+10% \$ .55	+50% \$2.75
Operating & Maintenance	+10% \$ .73	—	+25% \$1.44	+20% \$1.14
Interest Rate	+3% \$ .75	+4% \$1.00	+4% \$1.00	+5% \$1.25
Pipeline Volume	—	-5% \$1.28	-10% \$2.90	—
Increased Costs:	\$2.58	\$3.93	\$5.89	\$2.39
Bechtel Rate w/o Variation	\$12.60	\$12.60	\$12.60	\$12.60
Transportation Rate Per Ton	\$15.18	\$16.53	\$18.49	\$14.99
Gathering Costs In West Virginia (Lebo & Associates, Inc.)	\$ 1.95	\$ 1.95	\$ 1.95	\$ 1.95
Total Transportation Rate Per Ton	\$17.13 <sup>2</sup>	\$18.48 <sup>2</sup>	\$20.44 <sup>2</sup>	\$16.94 <sup>2</sup>
				\$18.05 <sup>1/2</sup>

1/ Using the Bechtel report sensitivity analysis (see page 4-22 et. seq.) the railroads do not believe there will be a savings to anyone. Utilizing Conservative variation figures and including gathering costs as estimated by the report of Lebo & Associates, Inc. (see pg. 31 et. seq.), the pipeline rates will greatly exceed the published railroad non-unit train rates in all instances. Note that in these estimates, three of the estimates are above published non-unit train rates without the addition of gathering costs. It is impossible to predict with any reasonable accuracy how much more money state customers would expend if the pipeline were built.

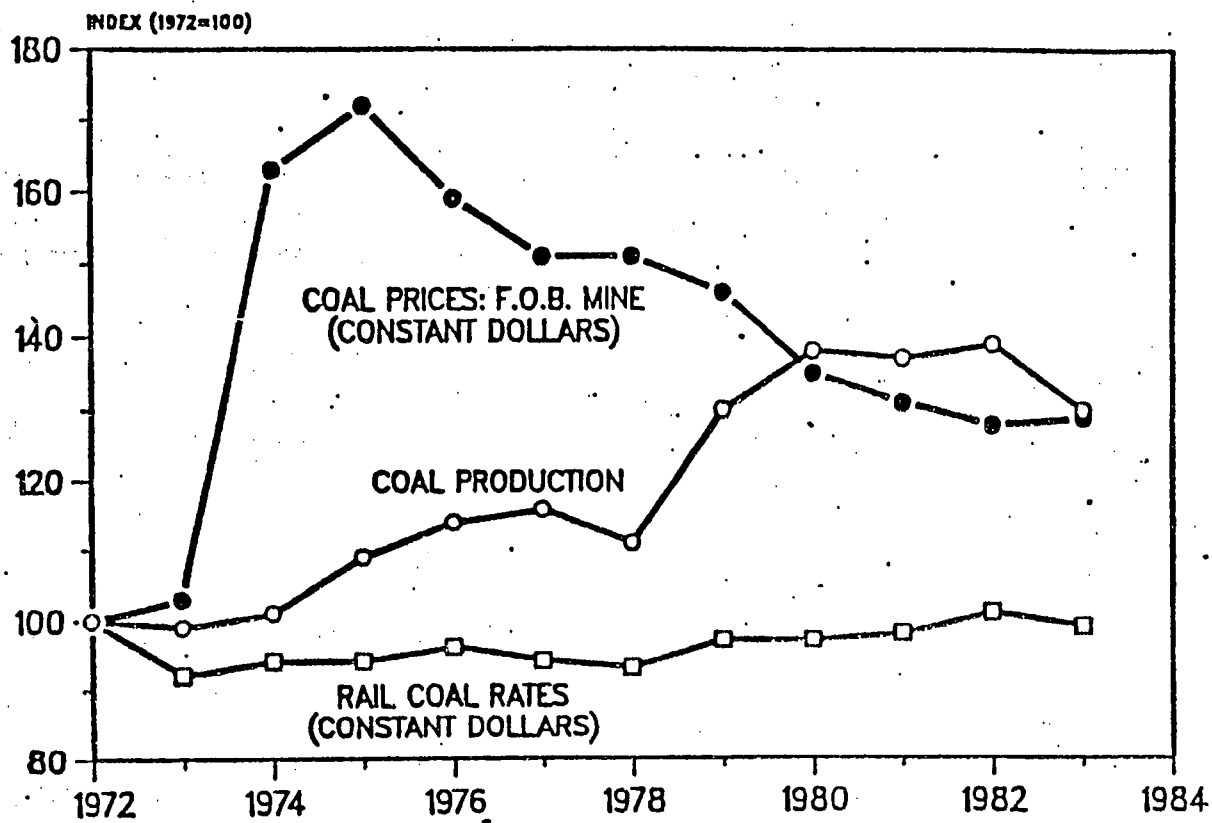
2/ Not included in this analysis are the costs of washing the coal (Poindexter), storage and segregation of coal at terminus, and other distribution charges contemplated but not explained or evaluated by proponents. (Lebo & Assoc.)

Proponents:

- Bechtel assumes a contingency of 12%.
- Gathering cost estimates by Lebo are for trucks only.
- The Bechtel report is based on actual coal pipeline construction, operation and maintenance experience, as well as other slurry and fuel pipeline experience. Lebo & Associates has no direct or indirect pipeline building experience.
- Poindexter did not testify to the washing of coal in this context; live and dead storage accounted for in Bechtel; discretionary charges are not presently counted in railroad or pipeline rates; therefore, the base rates are the relevant comparison.

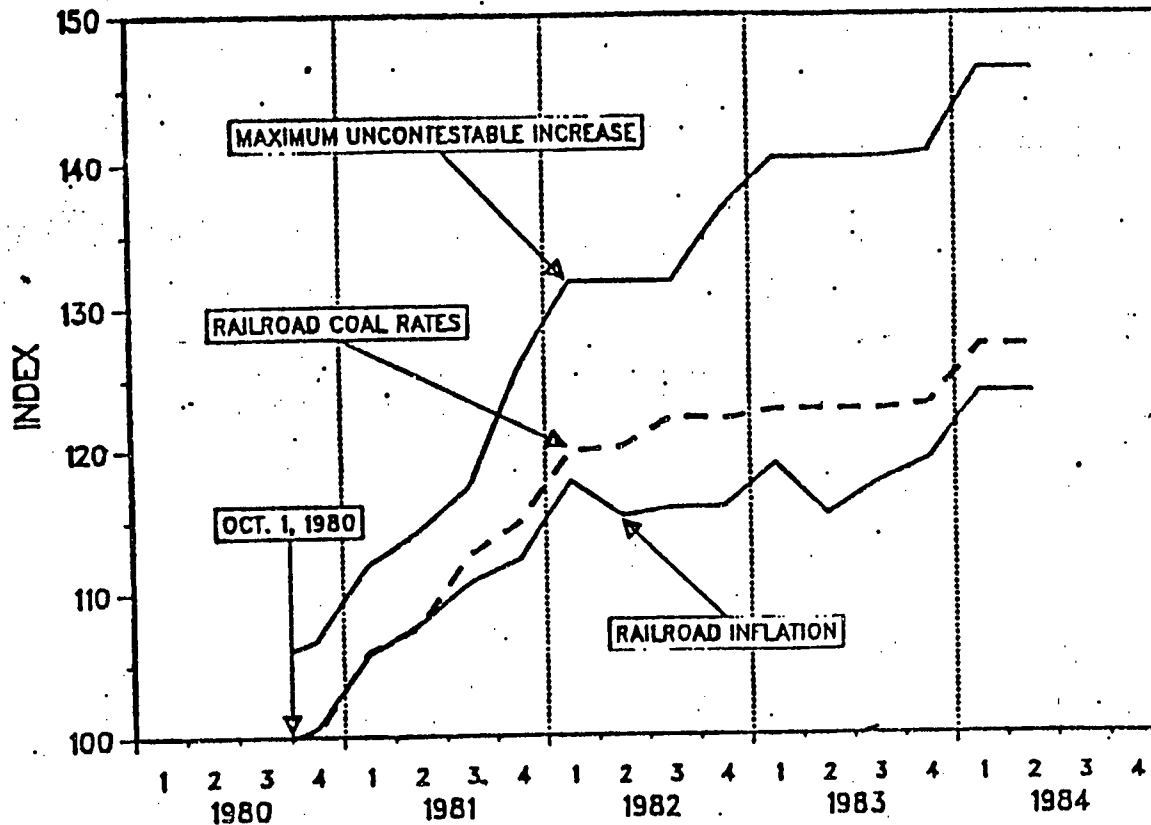
(Proponents')

APPENDICES 1-5

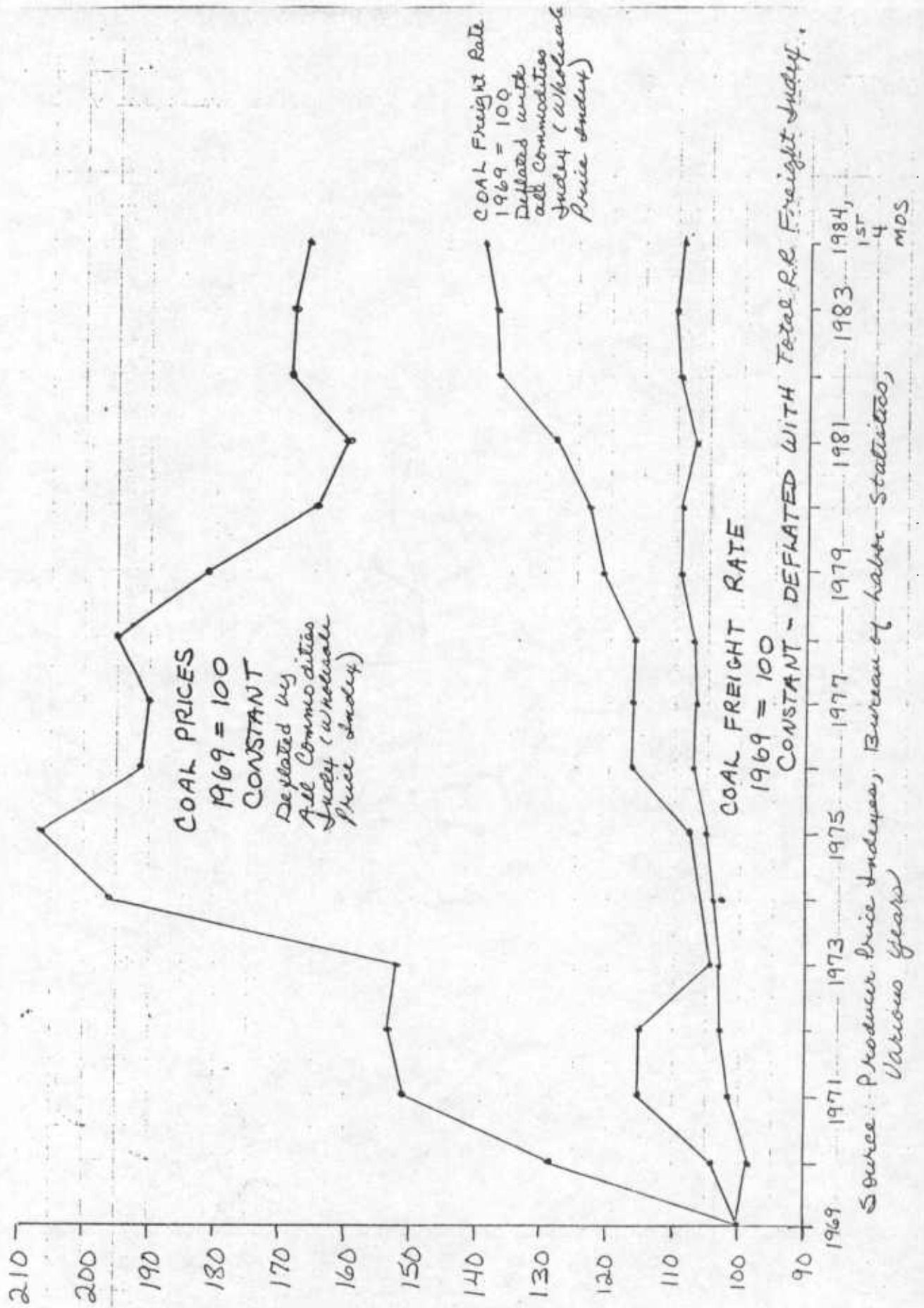
**COAL PRODUCTION, COAL PRICE, AND RAIL COAL RATE INDICES**

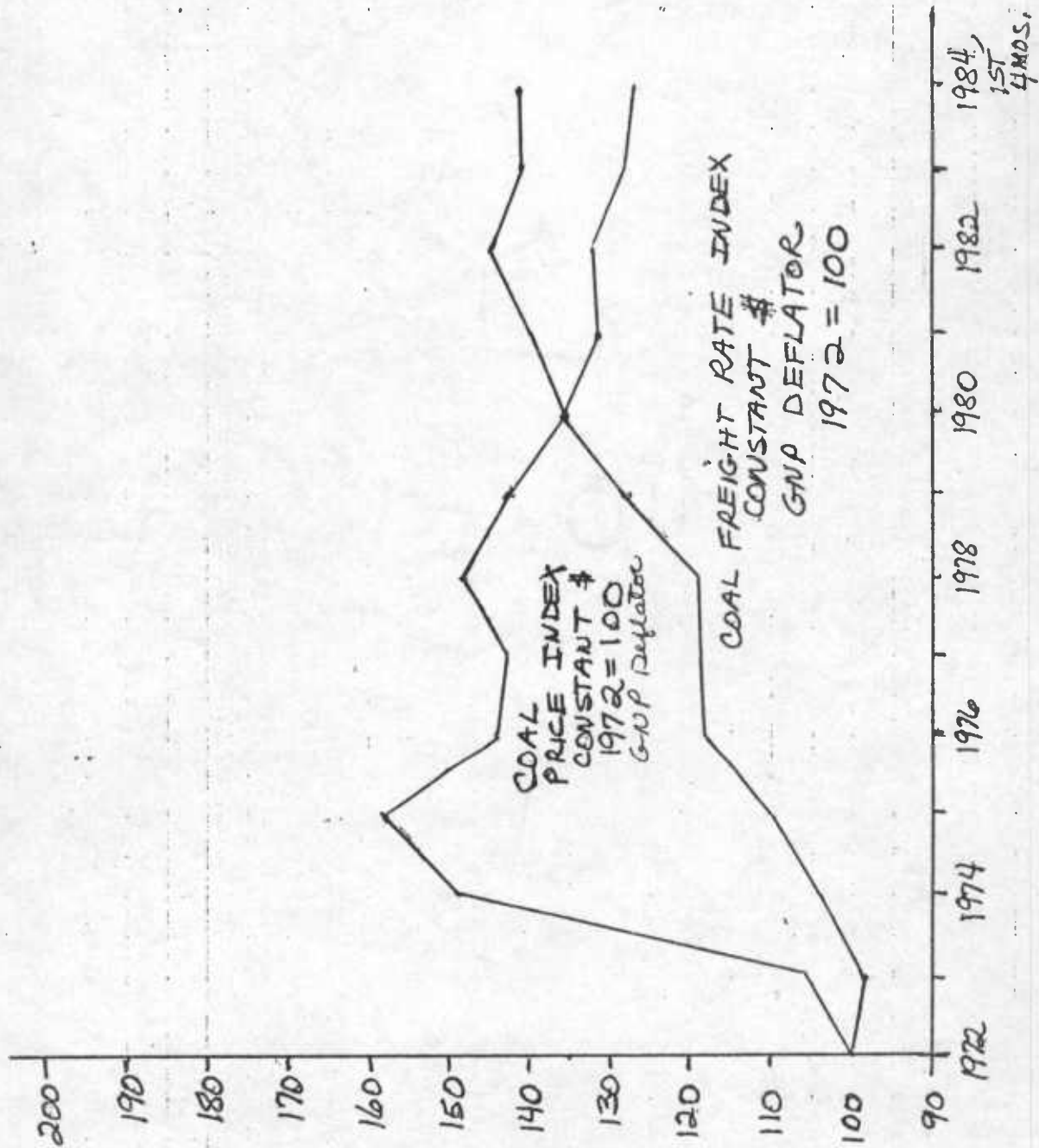
While rail coal rates are being blamed for high delivered coal prices, the facts belie the allegation. During the past 10 years, railroad coal rates have been relatively flat. Mine-mouth coal prices, meanwhile, almost doubled between 1973 and 1975. While those prices have been reduced somewhat, they remain significantly above their 1973 levels. Clearly, rail coal rates are not the cause of high coal prices.

## RAILROAD COAL RATES SINCE THE STAGGERS ACT



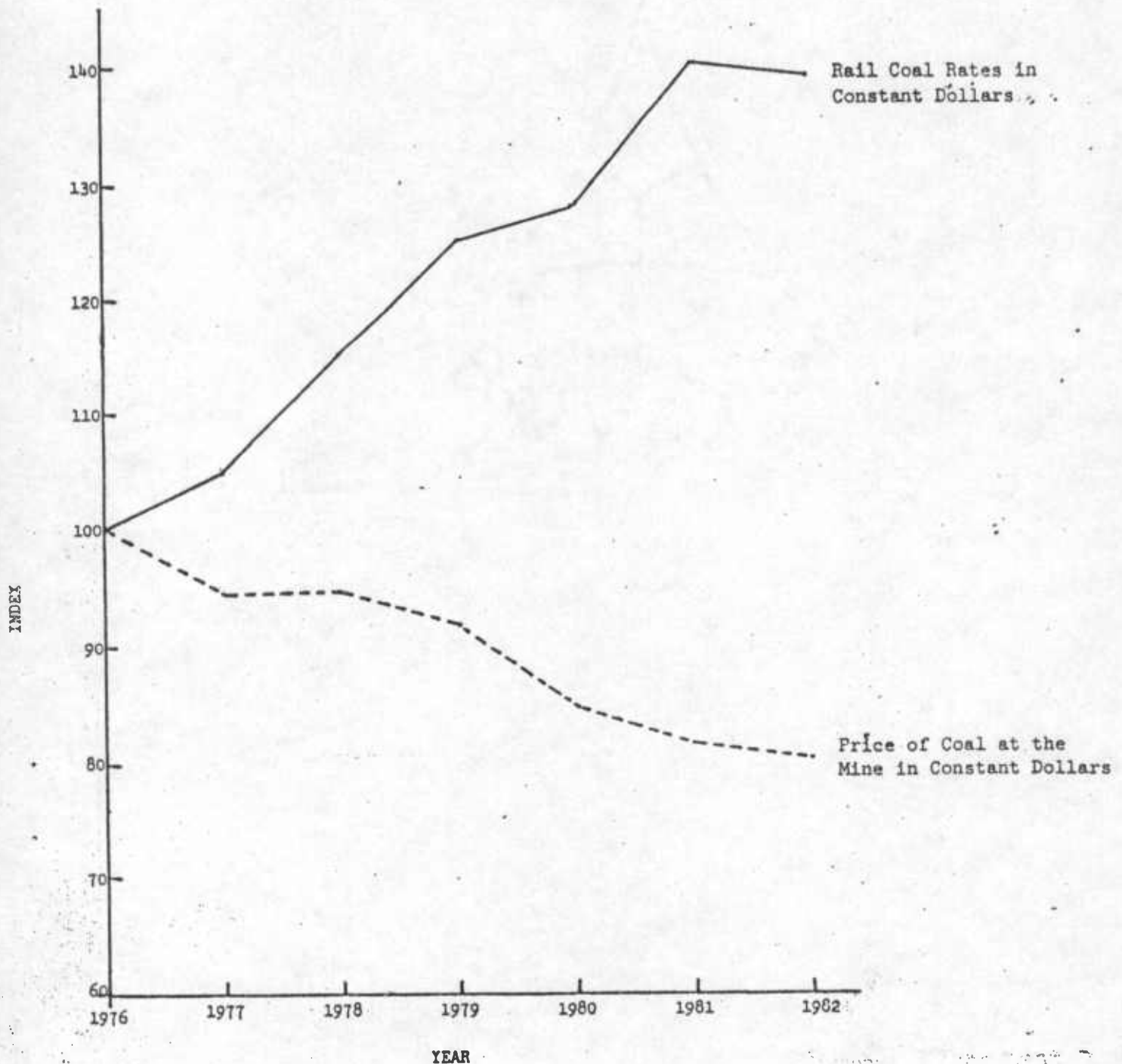
Since Staggers, railroads have increased coal rates only 3 percentage points above their inflation rate . . . despite having authority (under maximum rate regulation) to increase them 18 percentage points above inflation. . . and despite continued record investments in coal-hauling facilities . . . and despite the fact that not a single railroad system is revenue adequate . . . proving the existence of effective competition.





SOURCE: PRODUCER PRICE INDEXES, BUREAU OF LABOR STATISTICS, VARIOUS YEARS  
GNP DEFLATOR, DEPT. OF COMMERCE

A COMPARISON OF NATIONAL RAILROAD COAL  
RATES AND THE PRICE OF COAL AT THE MINE  
IN CONSTANT DOLLARS (1976 = 100)





**APPENDIX E**

**OPPONENT ARGUMENTS**



Proposed Pipeline	Proponents	Opponents
COST OF CONSTRUCTION	\$615 Million - For greater detail See Bechtel Report Page 4-2	<p><u>Additional Cost Factors</u></p> <ol style="list-style-type: none"> <li>1. Need additional storage space at origin</li> <li>2. Cost of pipeline too low (Cooke)</li> <li>3. Dewatering plant estimate low (probably need reverse osmosis plant) (Dr. Harris)</li> <li>4. Need additional facilities at utilities for barged coal (none provided for) (Lebo &amp; Assoc.)</li> <li>5. Probably need additional purifying plant (Dr. Harris)</li> <li>6. Need barge or ship facilities at dewatering facility (not provided for) (Lebo &amp; Assoc.)</li> <li>7. No pumping station provided for between Westernport and Brandon Shores</li> </ol>
	11% "Money" Financing available	At least 14% since risk capital (Cooke)
	Sensitivity Study performed	Need long term "take or pay" contracts for 20-25 years to justify building
		Sensitivity study simplistic - need multi-variant study (See Table 9 attached)
COST OF OPERATIONS	\$103.5 Million - For greater detail See Bechtel Report Page 4-8	<ol style="list-style-type: none"> <li>1. "Gathering costs" must be considered (Lebo &amp; Associates)</li> <li>2. Washing costs not considered (\$5.00/-ton (Poindexter as to need), (Lebo &amp; Assoc. as to cost)</li> <li>3. Additional storage costs at destination (Lebo &amp; Assoc.)</li> <li>4. Distribution costs omitted (Cost of distribution to other utilities, by pipeline or barge) (Lebo &amp; Assoc.)</li> <li>5. Dewatering plant operation underestimated (Probably need reverse osmosis) (Dr. Harris)</li> <li>6. No costs for stopping of line, introduction of W. Md. Coal, and segregation of dewatered coal at terminus, are included in the Bechtel Report</li> </ol>
	Sensitivity Study performed	Sensitivity study simplistic - need multi-variant study (See Table 9 attached)

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Coal	Proponents	Opponents
Demand	Significant demand in future. No adverse effect on railroads or rail labor	<ol style="list-style-type: none"> <li>1. Demand estimates consistently overstated (Till), (Talbot), (Wilner).</li> <li>2. Present and expected export demand "flat".</li> <li>3. Utility demand will be less than proponents claim.</li> <li>4. Sources identified by proponents exhibit only diversion of existing coal from railroad for the foreseeable future.</li> <li>5. No present facilities to receive slurry coal overseas.</li> <li>6. No known demand for slurry coal overseas.</li> <li>7. Even if an increase, will take coal from railroads and present loading facilities which have ample capacity to handle increased demand. (Chessie System alone has 65,000 hopper cars; piers at Baltimore have 44,000,000 ton capacity.)</li> <li>8. No known increased market ever discussed by proponents for Western Maryland Coal.</li> <li>9. National Coal Association predicts a 2 or 3% annual growth. See Table 12.</li> <li>10. Moisture content of slurried coal too high for present utility standards of consumption and too high for efficient burning. (Lebo &amp; Assoc.)</li> </ol>

Coal	Proponents	Opponents
Use of Western Maryland Coal.	Will add at least 1 MRY or more to pipeline. (Bechtel Report) (Poindexter Testimony.)	<p data-bbox="305 204 388 916">Western Maryland Coal will not be added to pipeline:</p> <ol style="list-style-type: none"> <li data-bbox="404 204 479 830">Only 5 mines, within Westernport gathering area - (Lebo &amp; Assoc.)</li> <li data-bbox="503 75 702 830">Western Maryland coal, unlike West Virginia coal, is soft and will produce vast quantities of flour-like "coal fines" which are difficult to handle and extremely expensive to dewater. - (Lebo &amp; Assoc.)</li> <li data-bbox="726 75 867 830">Reserves in West Virginia gathering area so vast, makes no economic sense to add Westernport facility for only <u>6-2/3% of pipeline volume.</u></li> <li data-bbox="892 86 999 830">Bechtel has not anticipated any storage or segregation facilities for Western Maryland Coal.</li> <li data-bbox="1024 75 1131 830">How often will the flow of West Virginia coal be interrupted to allow for the addition of Western Maryland Coal?</li> <li data-bbox="1156 75 1288 830">Will the railroads be available and able to handle coal deliveries when Western Maryland coal mines are unable to use the pipeline?</li> </ol>

Risks	Proponents	Opponents
Consumer	Little if any	<p>1. Long term take or pay contracts are necessary (Poindexter) which will create risks for the consumers (Wilner), (Talbott):</p> <ul style="list-style-type: none"> <li>a. If coal costs drops, no flexibility;</li> <li>b. If innovations occur - no flexibility;</li> <li>c. If demand drops, cost rises because of "take or pay" contracts;</li> <li>d. If pipeline fails or not completed, cost must be absorbed by consumers in rate base (see Braidwood article attached) or by lowered credit rating and higher borrowing costs by utility. (Keane) (Talbott) (Wilner)</li> </ul> <p>Risk that once started, must or will be completed "no matter what" (Talbott)</p>
	Proven technology	<p>2. Technology not proven in operation. Every coal slurry pipeline ever built was point-to-point. Black Mesa - all 5 million tons has one origin and is burned at pipeline terminus. There is no storage of or further transportation of dewatered coal. In proposed project, there are several different sources of coal and coal must be dewatered, stored, and then shipped. This has never been done in any coal slurry pipeline operation.</p>

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Risks	Proponents	Opponents
Environmental	Little risk: "trust us" (Poindexter)	<ol style="list-style-type: none"> <li>1. Bechtel study "Rudimentary" providing only a glimpse of environmental problems (Rich)</li> <li>2. State agencies have not discerned "specific impacts" (Rich)</li> <li>3. Disruption and fatalities during construction (Checkly)</li> <li>4. Risks to environment during construction, e.g., to streams, marshes, wildlife areas (Fox)</li> <li>5. Water procurement risks (low water level-environmental damage to West Virginia and Maryland streams) (Rich) (Dr. Harris)</li> <li>6. Risks at water crossings during operation (not quantifiable as route not exact, but still "conceptual")<sup>1/</sup></li> <li>7. Continuing risks of "small" leaks which are undetectable</li> <li>8. Risk of substantial "spills"               <ol style="list-style-type: none"> <li>a. Two at Black Mesa</li> <li>b. Six from gas and oil pipelines in Maryland (Rich)</li> </ol> </li> <li>9. Since 1976 ETSI methodology anticipates two major spills <u>every</u> five years (Dr. Harris)</li> </ol>

<sup>1/</sup> A spill at either Potomac River crossing would be an "environmental emergency" (Poindexter)

Risks	Proponents	Opponents
Environmental (continued)		<p>10. Risks relating to water disposal, sludge, and contaminated water remains (Dr. Harris)</p> <p>11. True test would require a proper time frame and realistic conditions (Dr. Harris)</p> <p>12. Water will end up directly or indirectly in Chesapeake Bay (Dr. Harris)</p> <p>13. Possible risk of spontaneous combustion (Lebo &amp; Assoc.)</p> <p>14. Environmental risks militate strongly against proceeding with pipeline until proper studies and evaluations have been initiated, performed, completed and understood</p> <p>15. Risk to environment specifically unknown since route of pipeline may change at any time.</p>

APPENDIX E

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Table 7. State Revenues/Investments/Subsidies

<u>Item/Period</u>	<u>Estimated Contribution by Pipeline \$ Millions</u>	<u>Opponents' Revision of Proposed Estimates</u>	<u>Opponents Estimates of Railroad Contribution</u>
Construction Phase (3 Yr. Totals)			
Direct State Tax Impact	9.5 <sup>1</sup>	3.15 <sup>1</sup>	-
Indirect State Tax Impact	<u>15.0<sup>2</sup></u>	<u>0<sup>2</sup></u>	-
Total	\$ 24.5	\$ 3.15	-
Operational Period (\$ Per Year)			
State Income, Sales and Property Taxes	1.3 <sup>3</sup>	.43 <sup>3</sup>	8.6
Gross Receipts Tax	Not Estimated	Not Estimated	Included Above
Local Property Taxes	<u>6.2<sup>4</sup></u>	<u>2.1<sup>4</sup></u>	<u>1.5</u>
Subtotal	\$ 7.5	\$ 2.53	\$10.1
State Subsidies	None	None	0 <sup>5</sup>
Total Estimate	\$ 7.5	\$ 2.53	\$ 10.1 <sup>5</sup>
New Capital Investment (Total)	\$ 600.0 <sup>6</sup>	\$ 200.0 <sup>6</sup>	\$ 27.0

<sup>1</sup> Proponents have neglected to inform the Committee that this figure reflects the direct State impact of both West Virginia and Maryland. More than two-thirds of the proposed line and 3 of the 4 preparation plants are in West Virginia.

<sup>2</sup> Proponents have neglected to inform the Committee that this indirect State tax impact must be compared to the indirect State tax impact caused by the permanent loss of railroad employment, construction, and investment. Therefore, this figure is not germane since the loss of indirect State tax revenues from railroad disinvestment and the like would, at a minimum, cancel this figure.

<sup>3</sup> Proponents have neglected to inform the Committee that this figure reflects the taxes of both West Virginia and Maryland. More than two-thirds of the proposed line and 3 of the 4 preparation plants are in West Virginia.

<sup>4</sup> Proponents have neglected to inform the Committee that this figure reflects the taxes of both West Virginia and Maryland. More than two-thirds of the proposed line and 3 of the 4 preparation plants are in West Virginia.

Table 7. (Continued)

<sup>5</sup> The Chessie System in Maryland is NOT subsidized by the State. To the extent that monies are paid to Chessie, Chessie is operating as a private contractor for the State to provide services that the State has deemed to be socially desirable. Should the State decide that these services are no longer desirable, Chessie would be delighted to stop offering them.

<sup>6</sup> Only one-third of the pipeline and only one of the preparation plants will be in Maryland.

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Table 8. Jobs

<u>Item</u>	<u>Proponents' Estimates (number)</u>	<u>Opponents' Revisions of Proponents' Estimates (number)</u>	<u>Opponents' Explanation of Opponents' Estimates of Railroad Jobs Lost</u>
Construction Phase (3 Years)			
Direct Temporary Employment	+ 2,500 <sup>1</sup>	850 [Estimated]	
Indirect Temporary Employment	+ 2,750 <sup>2</sup>	Unknown	
Operational Period			
Direct Permanent Employment	+ 310 <sup>3</sup> per year	+ 100	
Reduced BG&E Price of Electricity	+ 715 <sup>4</sup> per year	0	
Western Md., 1 MMTY	+ 300 <sup>5</sup> per year	0	
Transloading Facility	+ 90 per year	+ 90	
Subtotal	+ 1,415 per year	+ 190	
Railroad Jobs Loss	None to Minimal <sup>6</sup>	- 1,400 <sup>6</sup> immediate loss	1,400 <sup>6</sup> immediate loss
TOTAL PERMANENT JOBS - NET LOSS		- 1,210	

<sup>1</sup> Proponents neglected to inform the Committee that these jobs are for the entire pipeline constructions - MORE THAN two-thirds of which is in West Virginia.

<sup>2</sup> Proponents neglected to inform the Committee that these indirect temporary jobs must be compared to the permanent loss of indirect jobs derived from the loss of railroad employment. Therefore, this figure is not germane since indirect effect on railroads would, at a minimum, cancel this figure.

Table 8. (Continued)

<sup>3</sup> Proponents neglected to inform the Committee that these jobs are for the operation of the ENTIRE pipeline. - More than two-thirds of the pipeline will operate in West Virginia INCLUDING three of the four preparation plants.

<sup>4</sup> Proponents are assuming that there will be meaningful electric utility rate savings to Maryland customers and that industry will reinvest those savings to create new employment. Further, this figure is not germane, since loss of support jobs ancillary to railroad jobs lost would, at minimum, cancel this figure.

<sup>5</sup> Proponents have not explained how Western Maryland coal would enter the pipeline, how often, at what cost, to whom it would be sold, and how it would be segregated and delivered to the ultimate purchaser. Further, the Committee has not been informed as to whether this represents new coal or a diversion of existing coal from railroad traffic.

<sup>6</sup> While proponents now claim that only 2.7MMTPY of the "Cumberland corridor" Chessie coal traffic begins in the area where the proposed pipeline coal would originate, the Chessie System carries close to 20MMTPY through the Cumberland-Hagerstown area. It is clear from the Bechtel table (7-1) on page 7-2 that the proponents envision NO new sources for the sale of coal but plan to divert existing rail coal and replace it with pipeline coal, therefore reducing by at least 15MMTPY the amount of coal that Chessie carries. Moreover, should the proponents elect to move the pipeline from Western W.Va. to the Buckhannon, W.Va. area [the location of the pipeline origination during the 1984 General Assembly Session] all pipeline coal would then be from the B & O coal fields.

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TABLE 9. UTILITY RATE SAVINGS

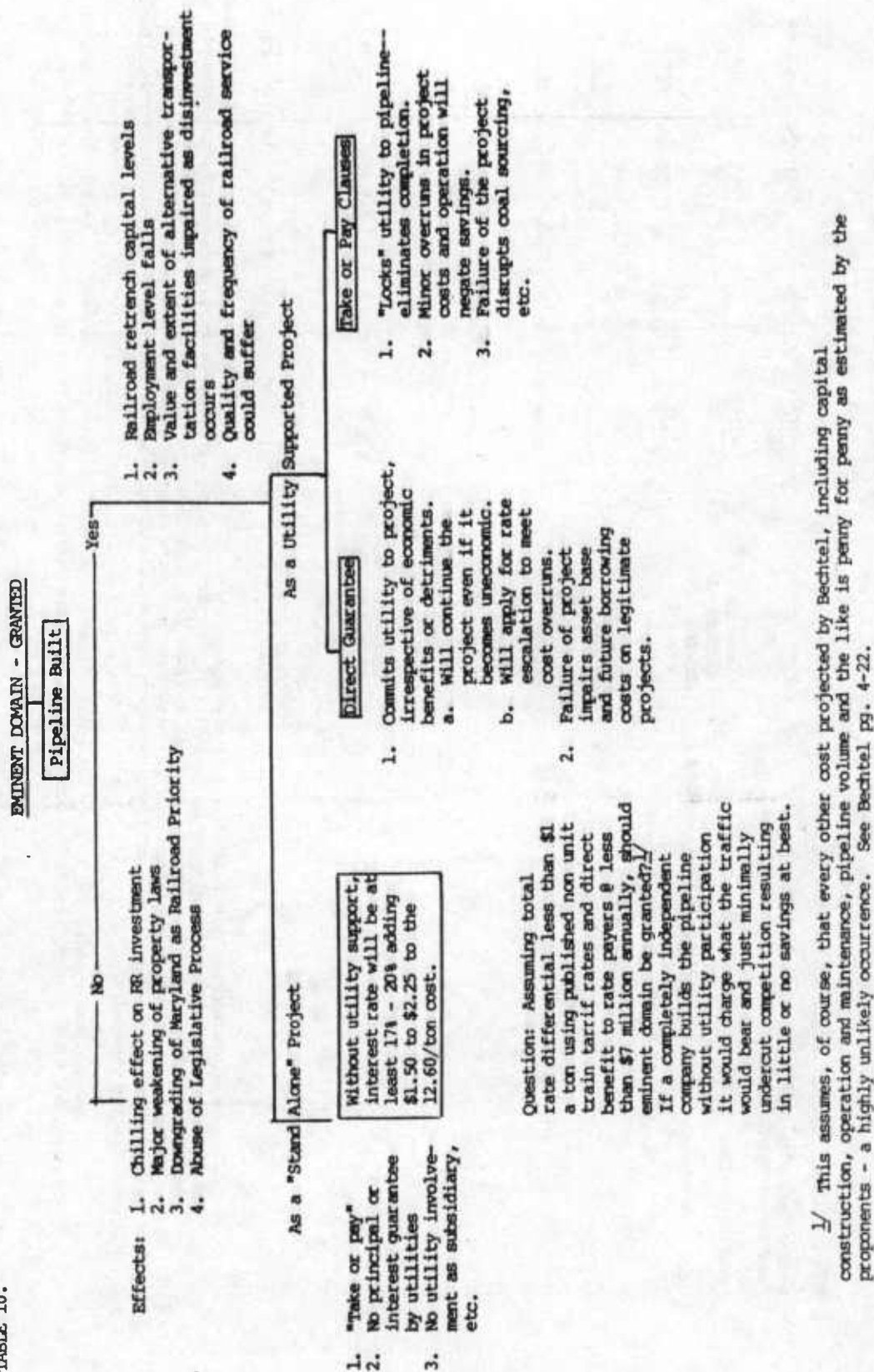
ITEM	Pipeline Estimates Electric Ratepayer Savings (BGE Service Territory Only) (\$ Millions)		Opponents Conservative Analysis of Potential Cost Over-runs Resulting In Higher Ratepayer Expenses			
			+20%	+30%	+10%	+50%
Residential, Commercial, and Industrial Customers	47.0 average per year	Capital Cost	\$1.10	\$1.65	\$ .55	\$2.75
State of Maryland	1.7 average per year	Operating & Maintenance	+10%	—	+25%	—
Local Government	3.8 average per year	Interest Rate	\$ .73	—	\$1.44	\$1.14
Total	\$52.5 average per year	Pipeline Volume	+3%	+4%	+4%	+3%
			\$ .75	\$1.00	\$1.00	\$ .75
		Increased Costs:	—	-5%	-10%	—
			—	\$1.20	\$2.90	—
		Bechtel Rate w/o Variation	\$2.58	\$3.93	\$5.89	\$3.50
		Transportation Rate Per Ton	\$12.60	\$12.60	\$12.60	\$12.60
		Gathering Costs In West Virginia (Lebo & Associates, Inc.)	\$15.18	\$16.53	\$18.49	\$16.10
		Total Transportation Rate Per Ton	\$17.132/	\$18.482/	\$20.442/	\$18.0512/

1/ Using the Bechtel report sensitivity analysis (see page 4-22 et. seq.) the railroads do not believe there will be a savings to anyone. Utilizing Conservative variation figures and including gathering costs as estimated by the report of Lebo & Associates, Inc. (see pg. 31 et. seq.), the pipeline rates will greatly exceed the published railroad non-unit train rates in all instances. Note that in these estimates, three of the estimates are above published non-unit train rates without the addition of gathering costs. It is impossible to predict with any reasonable accuracy how much more money state customers would expend if the pipeline were built.

2/ Not included in this analysis are the costs of washing the coal (Poindexter), storage and segregation of coal at terminus, and other distribution charges contemplated but not explained or evaluated by proponents. (Lebo & Assoc.)

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TABLE 10.



1/ This assumes, of course, that every other cost projected by Bechtel, including capital construction, operation and maintenance, pipeline volume and the like is penny for penny as estimated by the proponents - a highly unlikely occurrence. See Bechtel pg. 4-22.

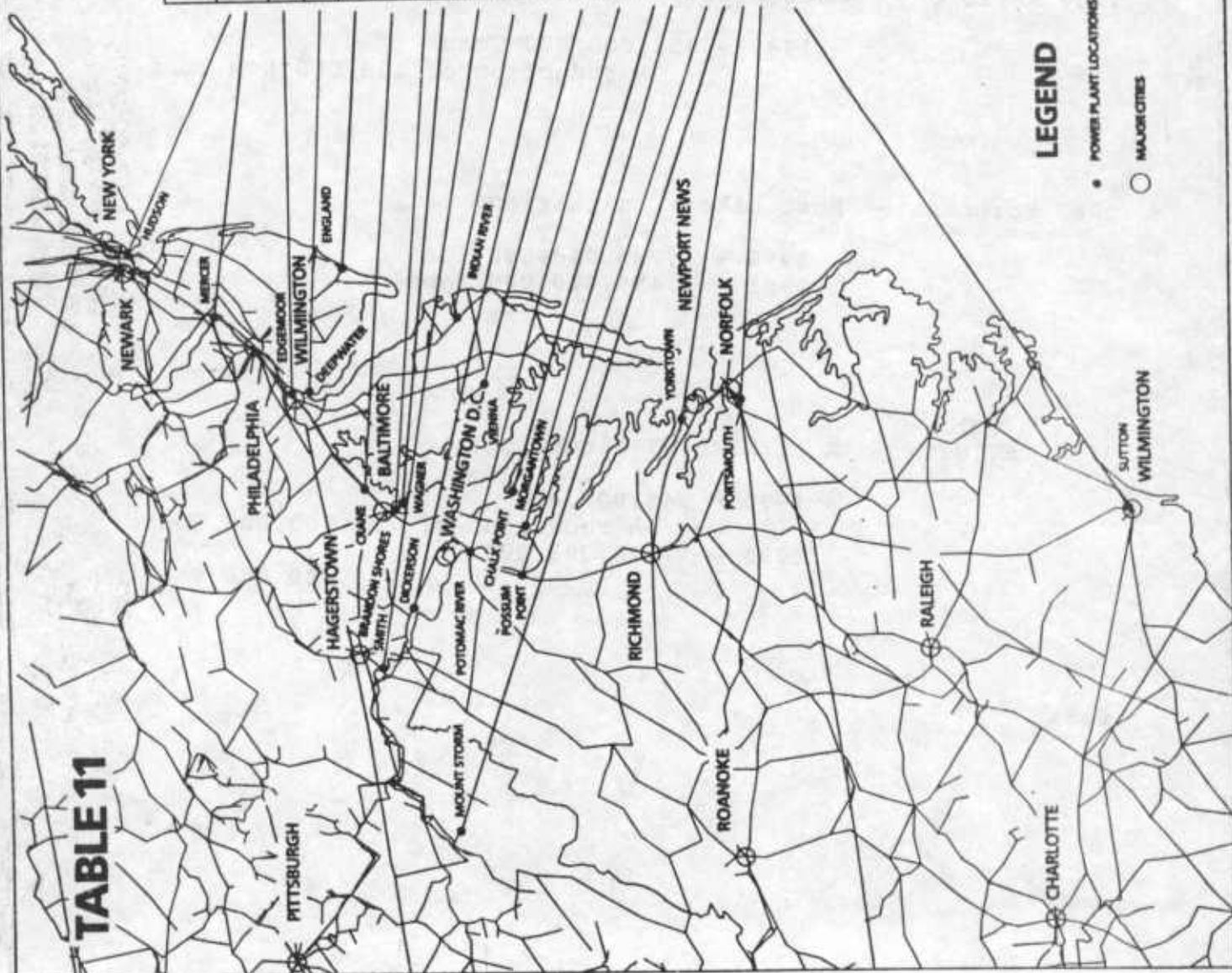
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**EAST COAST POWER PLANT, AND RAILROAD LOCATIONS AND CARRIER TRAVELING DISTANCES TO POWER PLANTS FROM BALTIMORE**

PLANT	UTILITY	SERVED BY	
		SERVER	MILES
HUDSON MERCER	PUBLIC SERVICE ELECTRIC & GAS	WATER WATER	274 118
EDGEWOOD	DELMARVA POWER & LIGHT	RAILROAD	87
DEEPWATER	DEEPWATER OPERATING CO.	RAILROAD	145
ENGLAND	ATLANTIC CITY ELECTRIC	RAILROAD	173
CRANE	BALTIMORE GAS & ELECTRIC	RAILROAD	25
BRANDON SHORES WAGNER	BALTIMORE GAS & ELECTRIC	WATER WATER	0 0
SMITH	POTOMAC EDISON CO.	TRUCK	80
INDIAN RIVER	DELMARVA POWER & LIGHT	RAILROAD	168
DICKERSON	POTOMAC ELECTRIC POWER	RAILROAD	92
VIENNA	DELMARVA POWER & LIGHT	RAILROAD	176
POTOMAC RIVER	POTOMAC ELECTRIC POWER	RAILROAD	65
CHALK POINT MORGANTOWN	POTOMAC ELECTRIC POWER	RAILROAD RAILROAD	80 80
POSSUM POINT MOUNT STORM YORKTOWN	VIRGINIA ELECTRIC & POWER	RAILROAD RAILROAD RAILROAD	89 273 232
PORTSMOUTH		RAILROAD	272
SUTTON	CAROLINA POWER & LIGHT	RAILROAD	411

NOTE: ALL DISTANCES ARE TAKEN FROM BALTIMORE TO THE POWER PLANT

The proponents have consistently failed to identify new end users for the slurried coal to be carried in the proposed pipeline. THE ONLY END USERS IDENTIFIED BY THE PROPOSANTS ARE NOW RECEIVING COAL BY EXISTING MODES OF TRANSPORTATION — ALMOST EXCLUSIVELY RAIL OR RAIL & BARGE (see Bechtel Table 7-1 at page 7-2). The railroads do not believe that there are sufficient other end users for the coal and, therefore, the 15 MMT/yr would have to be DIVERTED from existing rail movement resulting in the job loss reflected in Table 8.



**LEGEND**

- POWER PLANT LOCATIONS
- MAJOR CITIES

**TABLE 11**

TABLE 12.

NATIONAL COAL ASSOCIATION FORECASTS FOR OVER-ALL COAL  
CONSUMPTION:

1982 Forecast - "Most Likely" situation:

1985 - 987,000,000 Tons

1984 REVISION - "Most Likely" situation:

1985 - 854,000,000 Tons

A reduction of 133,000,000 Tons

1982 Forecast - "Most Likely" situation:

1990 - 1,235,000,000 Tons

1995 - 1,486,000,000 Tons

1984 REVISION - "Most Likely" situation:

1990 - 945,000,000

A reduction of 290,000,000 Tons

1995 - 1,128,000,000

A reduction of 358,000,000 Tons

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## Scrap Braidwood units, utility urged

By Daniel Rosenheim

**COMMONWEALTH** Edison Co.'s Braidwood nuclear plant faces new construction delays of as long as a year, which could cost the utility and its customers millions of dollars, The Tribune has learned.

That disclosure coincides with the completion of a study, sponsored by a public-interest group, concluding that Edison customers would save \$1.86 billion if the Braidwood project were canceled.

"We've demonstrated that Braidwood isn't justifiable on an economic basis," said John Stutz, a research scientist who co-authored the report for the Boston-based Energy Systems Research Group. "When you look beyond economics to all the other uncertainties that accompany a nuclear unit, the case for cancellation becomes quite clear."

**EDISON SPOKESMAN** James Toscas disputed the study's conclusions, asserting that they are based on unwarranted assumptions about the rate of growth in demand for electricity.

"Our calculations have shown repeatedly that the cheapest thing to do is finish Braidwood," Toscas said. "In a no-growth situation, you could justify cancellation, but we project growth of 2 percent a year. If anything, load growth has exceeded our projections in the last two years."

The utility's report that it is falling behind schedule on Braidwood was contained in testimony submitted without fanfare in September to the Illinois Commerce Commission and in a prospectus dated Sept. 4 for a \$40 million offering of Edison preferred stock to help finance the plant. A month later, the utility officially informed the Nuclear Regulatory Commission of the possible delay in a letter from Edison Vice President Cordell Reed.

In those documents, Edison said it expects postponements of as long as a year each in the service dates for its two Braidwood nuclear generators, which had been expected to begin operating in April, 1988, and April, 1989.

Only five months earlier, Edison officials insisted that the official schedule would not have to be changed.

Copies of the prospectus and Edison's testimony have been obtained by The Tribune, along with draft conclusions of the study by the Energy Systems Research Group.

**TOSCAS SAID** Friday that the possibility of new delays has arisen from the recent unpublished decision by Edison Chairman James J. O'Connor to order a massive reinspection program to analyze records and construction quality at Braidwood, involving a 100-member task force on a full-time basis.

"We want to ensure that we don't run into the last-minute questions that we found at [the] Byron [nuclear plant]," Toscas said. "The Braidwood Construction Assessment Program is much larger than anything we did at Byron."

Eighteen months ago Edison was fined \$100,000 by the NRC for failing to follow proper procedures in the installation of certain equipment at Braidwood. In addition, the NRC has repeatedly delayed operating approval for Byron in a dispute with the utility over quality standards.

Toscas said Edison isn't aware of any particular problems at Braidwood, but he added that it is reasonable to assume the task force will make recommendations that would produce delays. He said he doubted whether any postponement would exceed a few months, but he said the utility is projecting setbacks of "up to one year," in part because of a recent lawsuit that accused Edison of failing to anticipate such delays in the Byron project.

**IT'S DIFFICULT** to determine how much any delay would cost Edison and its ratepayers, partly because of controversy over which costs should be included in the calculations and partly because of difficulty in calculating how much more work any delay might represent.

Toscas said the utility couldn't estimate the cost of any

Continued on page 8, col. 1

From Page 1

# Edison

Continued from page 1  
Braidwood delay, but be noted that the utility has said previous delays in Byron construction were costing it \$1 million a day.

Investment analysts said, however, that a one-year delay at Braidwood would likely increase the project's cost by 10 to 20 percent, bringing its total price tag to a range of \$1.93 billion to \$4.29 billion, compared with Edison's official estimate of \$3.59 billion.

"That puts them right on the path that I anticipated," said New York-based energy consultant Charles Komarnoff, who estimates Braidwood's total price tag will eventually exceed \$5 billion.

THE INCREASE in total project costs includes the increased time during which Edison must pay interest or dividends on the money it has raised to finance the project, increases in the cost of materials because of inflation and increases in the real cost of the project.

The latter category, which has the most direct impact on ratepayers, includes expenses that pile up while the clock is ticking. The utility has to pay administrators and supervisors in addition to dealing with the likelihood that any delay would reflect the need to perform more work than originally anticipated.

Last April, after a study by Komarnoff suggested that Edison was seriously underestimating Braidwood's cost, Edison officials insisted that a \$3.6 billion estimate for the project should hold.

The 20-page Energy Systems Research Group report was commissioned by Business and Professional People for the Public Interest, a Chicago-based consumer-advocacy group that wants the Braidwood

new Edison coal-fired plants.  
● **Employment.** Cancellation of Braidwood, the report claims, would stimulate jobs and economic development through greater use of Illinois coal at more labor-intensive coal-burning plants.

● **Reliability.** Cancellation would improve the "mix" of power sources, reducing Edison's use of nuclear power to 76 percent from 85 percent of its average generating mix.

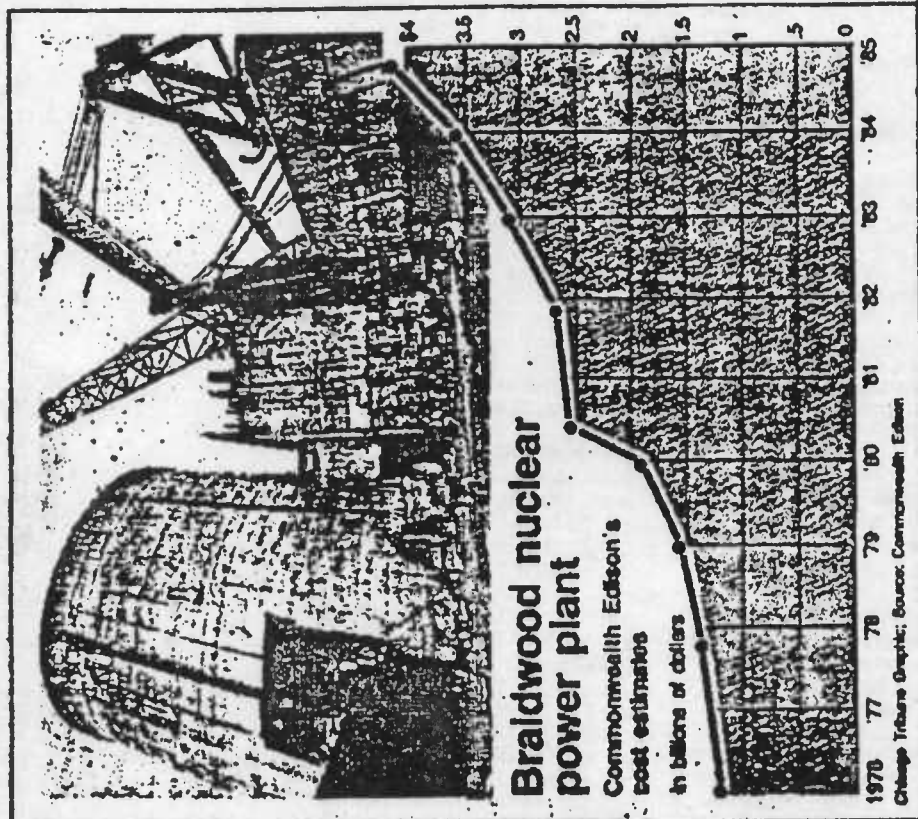
The report further argues that Edison's financial health wouldn't be impaired by cancellation, assuming regulatory treatment permitting the utility to recover 100 percent of its construction costs over a 10-year period. The Energy Systems Research Group study argues that Braidwood's major costs "substantially exceed" the fuel savings expected to result from its operation.

The study doesn't discuss the possibility of converting Braidwood to a coal-fired unit.

Toscas said Edison estimates that Braidwood or its equivalent will be needed no later than 1991. He conceded that Braidwood would boost Edison's generating reserves to more than the 15 percent guideline but asserted that the guideline represents only the minimum acceptable level, noting that average preferred reserve levels nationwide are 20 percent.

TOSCAS SAID there is no guarantee that Edison could use Illinois coal to replace Braidwood's uranium, particularly because the high-sulfur content of the state's coal makes it nearly impossible to meet air-quality standards.

He also said there is no assurance that Edison would be permitted to recover its costs on Braidwood, adding: "It seems to me our customers would rather pay for something they can use than spend \$1.5 billion for something they never get to use."



nuclear units canceled. The report will be filed Tuesday with the ICC by the Public Interest group, the United Mine Workers of America and Citizens for a Better Environment.

In addition to claiming the \$1.86 billion saving to ratepayers, the study attacks the Braidwood project on a variety of other economic grounds, including:

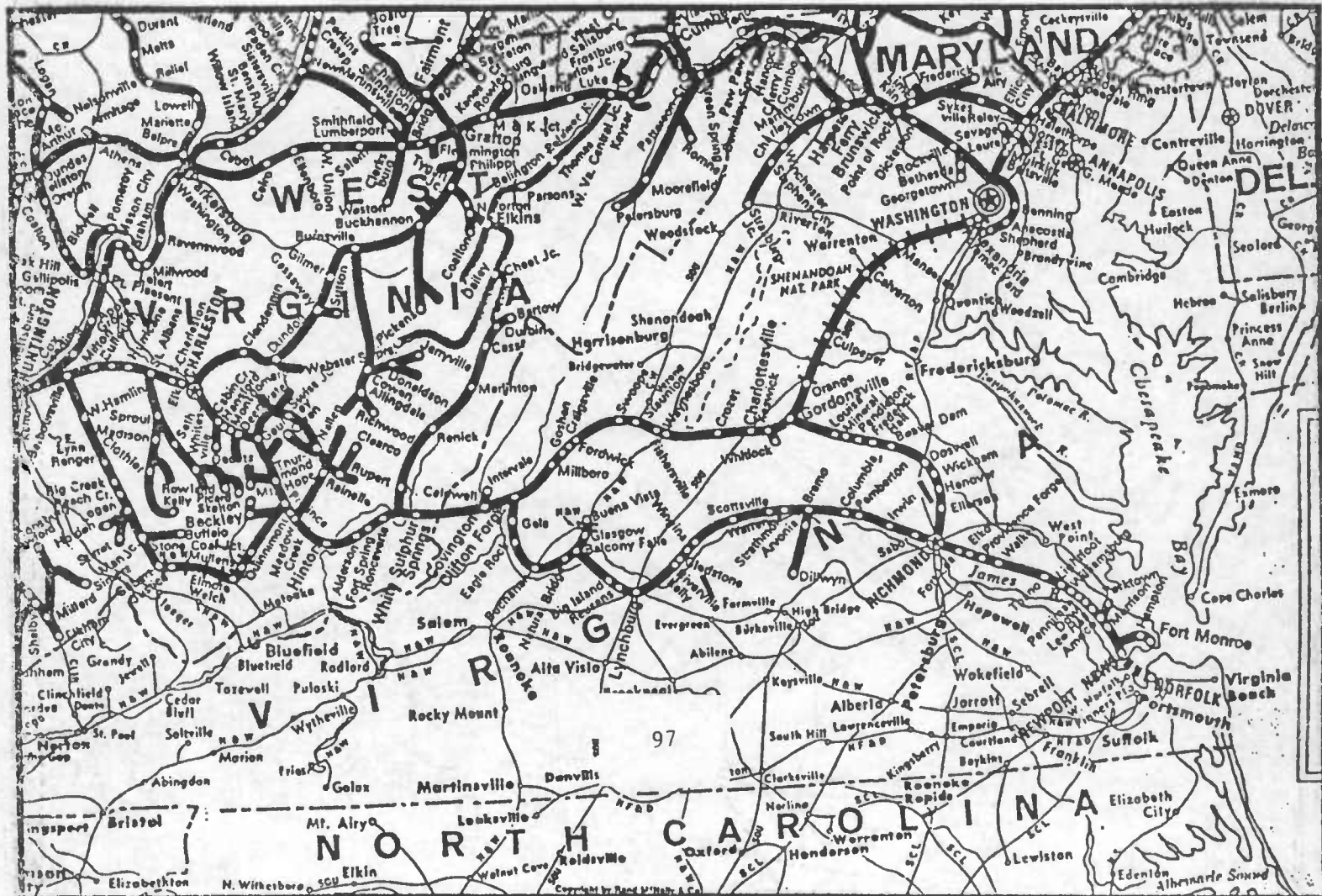
● Absence of need. The report argues that Edison's margin of reserve generating power will soon be twice the 15 percent level the utility acknowledges to be prudent, even without Braidwood. In addition, it asserts that "in the unlikely event of unexpected growth in demand," there are ample alternatives to Braidwood, including ICC policies designed to promote more effective conservation and co-generation, increased purchases of power from underutilized Downstate coal plants and, if necessary, construction of

HUNTINGTON TO BALTIMORE ( )  
B&O (ALL RAIL)

APPENDIX E

ROUTE	MILES	CARS	UNITS	CREWS
Huntington-Parkersburg	119	150	3	1
Parkersburg-Grafton	105	90	5	1
Grafton-Cumberland	99	90	4 (push)	2
Cumberland-Brunswick	100	180	2 (push)	2
Brunswick-Baltimore	59	120	2 (push)	2
TOTALS:	482	<del>530</del> NA	<del>NA</del> 16	8

\*NA= Not Applicable

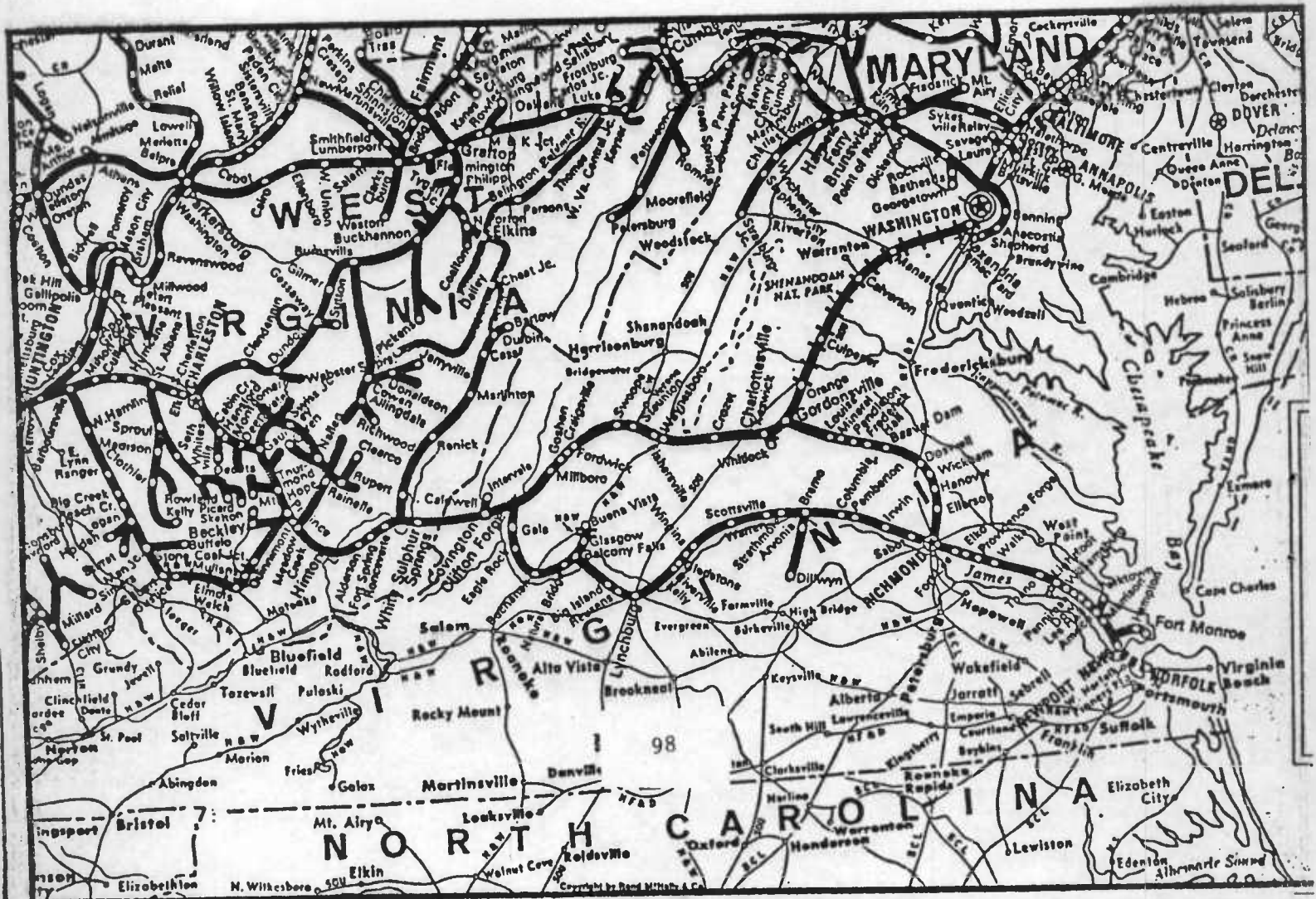


# HUNTINGTON TO BALTIMORE C&O--B&O (ALL RAIL)

APPENDIX F

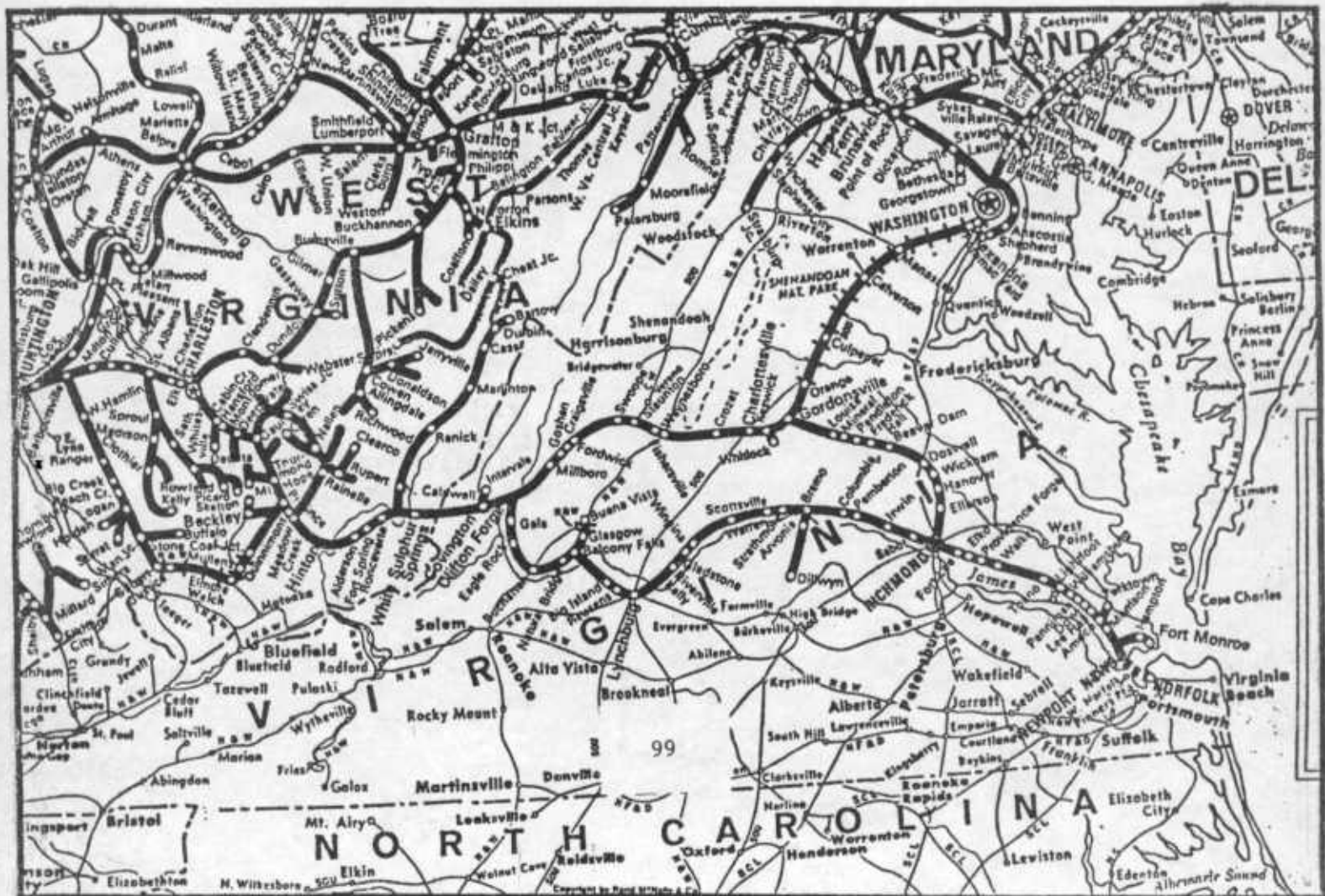
ROUTE	MILES	CARS	UNITS	CREWS
Huntington-Handley	75	160	3	1
Handley-Hinton	72	160	4	1
Hinton-Clifton Forge	76	160	4 (push)	2
Clifton Forge-C'ville	99	70	5	1
C'ville-Potomac Yard	94	80	4	1
Potomac Yard-Baltimore	32	125	4	1
TOTALS:	448	755	NA	7

\*NA= Not Applicable



ROUTE	MILES	CARS	UNITS	CREWS
Huntington-Handley	75	160	3	1
Handley-Hinton	72	160	4	1
Hinton-Clifton Forge	76	160	4 (push)	2
Clifton Forge-Gladstone	106	190	2	1
Gladstone-Richmond	120	190	2	1
Richmond-Newport News	70	190	2 (push)	2
TOTALS:	519	<del>1050</del> NA	<del>NA</del> 17	8

\*NA= Not applicable



RESPONSES TO PRELIMINARY ISSUE TABLES

Prepared by Opponents to  
Coal Slurry Pipeline

Ira C. Cooke  
Franklin Goldstein  
Legislative Representatives

Table 1. Coal Rail/Pipeline Rates

## Item 1. Central West Virginia to Curtis Bay

## Opponents:

1. Proponents have used a single car rate not a unit train rate which is considerably cheaper.
2. These published tariff rates are substantially higher than the Baltimore Gas & Electric Company contract rate.
3. Proponents have included weighing and dumping fees in their analysis of railrates. Without these fees \$14.85 is the single car rate from Central West Virginia to Curtis Bay via B & O.
4. The \$12.60 estimated pipeline rate in the Bechtel Report is not realistic and among other things does not include:
  - (a) Gathering costs (\$1.58 to \$1.95 per ton) (Lebo & Associates, Inc.)
  - (b) Storage costs at terminal (Lebo & Associates, Inc.)
  - (c) Washing of part of coal at up to \$5/ton (Poindexter) (Lebo & Associates, Inc.)
  - (d) The weighing or dumping fees which have been included on proponent's statement of the rail rates.
  - (e) Loading and distribution costs at destination (Lebo & Associates, Inc.)
  - (f) Probable cost overruns as shown in Table 9 of opponents separate attachment.

## Item 2. Rail rates from West Virginia to Baltimore compared to rates from West Virginia to Hampton Roads, Virginia, to Baltimore by barge

## Opponents:

1. The all-rail charges from Southwestern West Virginia (or Kentucky), where Baltimore Gas & Electric has opted to buy its coal for Brandon Shores, to Baltimore are higher because terrain problems which limit the number of cars on that route.
2. The B & O rates from the present area in central and northern West Virginia from which BG & E purchases coal for its Wagner plant (and in which Potomac Electric Power Company makes spot market purchases), to Baltimore, are lower than the rates from southwestern West Virginia (or Kentucky) to Hampton Roads.
3. In the Bechtel Report presented during the 1984 General Assembly Session the pipeline was supposed to originate in the central and northern West Virginia area where the B & O rates to Baltimore are lower.

Item 3. Rail rates from Cumberland, Maryland, to Baltimore compared to rates from Baltimore to Europe

Opponents:

1. Comparison of rail rates with water rates to Europe is totally irrelevant, particularly since the water rates also far exceed the estimated pipeline rates.
2. The only relevant comparison is the actual rail rates compared to the correctly estimated pipeline rates. See Table 9 of opponents separate attachment.

Item 4. Baltimore Gas & Electric Rail Rates

Opponents:

Contract rates with Baltimore Gas & Electric Company are substantially lower than the published tariff rates, thus rendering inappropriate the comparisons made by proponents as to the relative rate levels (Poindexter) (Yocum) (Cooke)

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Table 2. Coal Freight Rate Increases/Pipeline Rate Increases

Item 5. Western Maryland to Baltimore

Opponents: See Item 7

Item 6. BG&E and PEPCO Combined Freight Rate Increases

Opponents: See Item 7

Item 7. Contract Rates

Opponents:

Since 1982 tariff rate increases have been moderate. While contract rates are confidential between the parties, proponents say that contract rates increase at the same rate as tariff rates. On January 1, 1982 tariff rates on domestic coal transportation increased 4.7%; on January 1, 1983 tariff rates on domestic coal transportation increased 1% and that increase was later cancelled; on October 9, 1983 tariff rates on domestic coal transportation increased 1.2%; on January 1, 1984 tariff rates on domestic coal transportation increased 4.1%; and on July 1, 1984 tariff rates on domestic coal transportation increased .4%. The tariff rates will not increase again prior to January 1, 1985, therefore, over three years the rate increased a total of 10.4% which is an average of less than 3.5% per year, below the average cost of inflation over the same period.

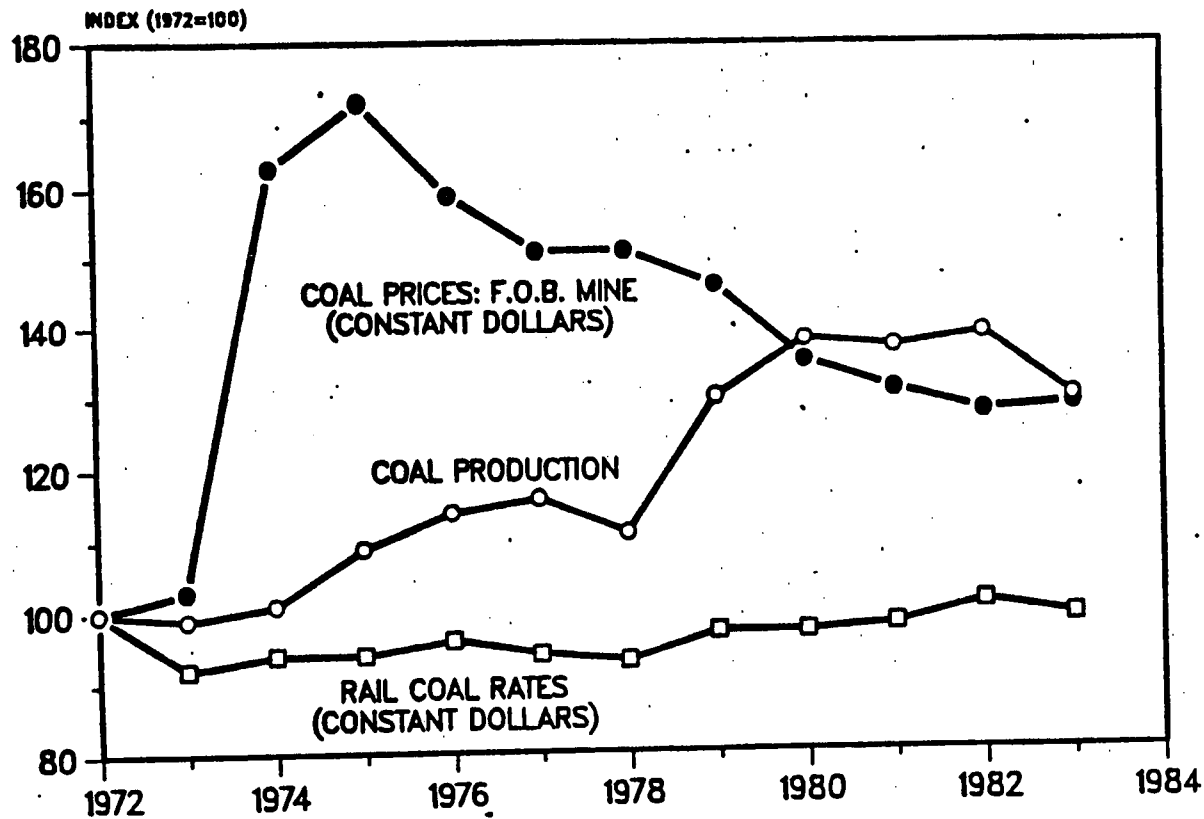
Item 8. National Rail Rate Increases

Opponents:

To illustrate the comparative increases of rail rates and mine mouth coal prices, Frank Wilner, in his testimony, included Appendix 1 and Appendix 2 which for convenience of reference are attached hereto.

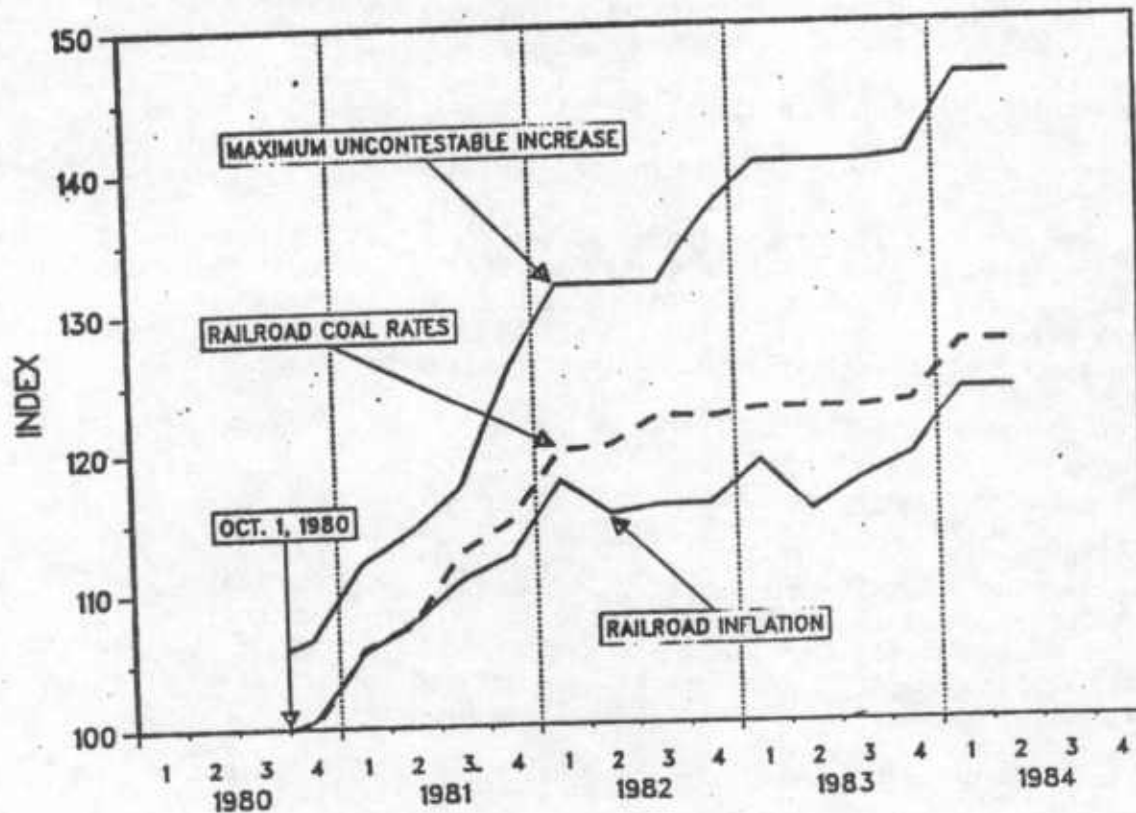
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# COAL PRODUCTION, COAL PRICE, AND RAIL COAL RATE INDICES



While rail coal rates are being blamed for high delivered coal prices, the facts belie the allegation. During the past 10 years, railroad coal rates have been relatively flat. Mine-mouth coal prices, meanwhile, almost doubled between 1973 and 1975. While those prices have been reduced somewhat, they remain significantly above their 1973 levels. Clearly, rail coal rates are not the cause of high coal prices.

## RAILROAD COAL RATES SINCE THE STAGGERS ACT



Since Staggers, railroads have increased coal rates only 3 percentage points above their inflation rate . . . despite having authority (under maximum rate regulation) to increase them 18 percentage points above inflation. . . and despite continued record investments in coal-hauling facilities . . . and despite the fact that not a single railroad system is revenue adequate . . . proving the existence of effective competition.

Table 2. (continued) Coal Freight Increases/Pipeline Rate Increases.

## Item 9. Proposed ICC Rulemaking on Rates for Captive Shippers

## Opponents:

Railroads have not even approximated the 15% per year figure allowed. The railroad industries position is that the Interstate Commerce Commission should not continue the 15% per year over inflation, and the ICC has a duty to investigate in all appropriate cases. As a general rule, an increase of 4% over inflation should be used as an appropriate level at which an investigation is triggered.

## Item 10. Gauge of Railroads' Financial Health

## Opponents:

Railroad rate on return on investment (ROI) is calculated on original cost (book value) as all other industry ROI's - (ICC revenue adequacy proceedings). Railroad is not a monopoly which is "permitted" a set rate of return on products as is BG & E. The financial position of BG & E is so favorable that it will generate 75% of its 1983 capital needs through internal sources and is seeking to diversify for investment purposes (Talbot) (BG & E Stockholders Report).

## Item 11. BG &amp; E Rate of Return Calculated on a Replacement Cost Basis

## Opponents:

Calculation of Baltimore Gas & Electric Company's rate of return on a replacement cost basis is totally irrelevant in these proceedings. Baltimore Gas & Electric Company is a monopoly with a guaranteed rate of return.

## Item 12. Pipeline Transport/Freight Rate Increase Assumptions and Assessment of the New ICC Rate Standards

## Opponents:

1. Rates of inflation are highly variable and projections for 20 years are not reliable and have never been particularly reliable.
2. The 6% pipeline rate assumed does not include possible escalation of the higher rate for gathering costs by truck which will be 30% of the cost according to the Bechtel Report.
3. Assumed increase for railroads does not take into account present and possible cost savings due to innovations, productivity increases or decreases in labor costs by more flexibility in work rules.

- 4. The initial costs of pipeline transportation used by proponents does not consider the probable costs overruns. (See Table 9 in opponents separate attachment)

Item 13. Western Maryland

Opponents:

The railroad policy on loading and unloading is an attempt to help reduce costs for shippers. The railroad has offered to pay a large amount of the cost to the shippers for the alteration of their facilities by means of an "advance and refund provision" which gives an allowance for each car shipped until the cost of the alteration of the facilities is reached. (Yokum)

0913g/3

Table 3. Coal Demand and Production Estimates,  
Domestic and Export

Item 14. Maryland Utilities

Opponents:

Total demand for coal by utilities in the middle Atlantic region, including Maryland, will decrease 4% by 1993 (Talbot).

Item 15. South Atlantic States

Opponents:

1. This data is irrelevant since pipeline proponents have never proposed to service power plants in West Virginia, North Carolina and South Carolina (Bechtel Report)(Vrooman)
2. The proponents statements of a major increase in domestic coal demand is inconsistent with trends for domestic coal consumption (Talbot).

Item 16. National Domestic and Export Market

Opponents:

1. Outlook for increased demand for domestic coal flat (Talbot).
2. From April, 1982 to March 1984 National Coal Association revised downward by 358 million tons its estimates for 1995 (see Table 12 in opponents separate attachment)

Item 17. Demand for Coal by Europe

Opponents:

European demand for export coal is highly speculative and subject to massive annual fluctuation. The United States exported 13.2 million tons in 1980; 25.3 million tons in 1981; 21.4 million tons in 1982 and only 13.4 million tons in 1983 (Talbot).

Item 18. Demand for Western Maryland Coal by Europe

Opponents:

"Coal particle size consist" will decrease and coal surface moisture (percentage by weight) will increase making slurried Western Maryland coal less welcome in European markets (Lebo & Associates, Inc.) European users are presently not equipped to handle slurried coal.

• Table 4. Water Issues

• Item 19. Solids Content of Recovered Water

Opponents:

Additional sources for opponents on this issue are the pictures and slides of the area surrounding Mohave Generating Station compared with Lake Powell Generating Station introduced by Ira Cooke, August 22, 1984.

Item 20. Coal Separation Technology

Opponents:

Separation technology will produce hazardous waste in the form of liquid or solid sludge containing toxic metal, organic contaminants, and coal fines. (Dr. Harris) As additional sources for opponents' testimony, see pictures and slides of area surrounding Mohave Generating Station compared with Lake Powell Generating Station introduced by Ira Cooke, August 22, 1984.

Item 21. Evaporation Ponds

Opponents:

Additional sources for opponents' testimony are the pictures and slides of area surrounding Mohave Generating Station compared with Lake Powell Generating Station introduced by Ira Cooke, August 22, 1984.

Item 22. Water Uses

Opponents:

1. Other than the possibility of use at Brandon Shores, opponents have not developed any other possible uses or indicated how the water would be transported if it were to be used elsewhere.
2. In a study produced October 31, 1983, by the Applied Marine Research Laboratory, Old Dominion University, Norfolk, Virginia, for the Commonwealth of Virginia Joint Subcommittee for the Coal Slurry Pipeline Study it was indicated that it were determined that if reuse of the waste water by the Vepco Portsmouth Power Generating Station was unacceptable, there were no other uses. Therefore treatment and stream discharge were considered the only means of disposal.

Item 23. Brandon Shores Cooling Tower Makeup Water Requirements

Opponents:

1. Waste water eventually will be indirectly discharged into the Chesapeake Bay (Sierra Club) (Friends of the Earth ) (Environmental Policy Institute) (Clean Water Action Project) (City Bar Streams) (STING) (Maryland Waste Coalition) (Maryland Conservation Council) (Dr. Harris).
2. Even in a closed loop system, water has to be changed and some water discharged as the water becomes contaminated through use in the system itself.

Item 24. Water Treatment Tests

Opponents:

1. The final results of the Lehigh University Analysis have not been made available.
2. The results of the EA Engineering Analysis are scientifically inaccurate as control test container was broken and other containers were contaminated.

0913g/5

Table 5. Pipeline Safety

Item 25. Coal Pipeline Shutdowns

Opponents:

If a coal slurry pipeline is shutdown for a period of time allowing the heavy particles of slurry mixture to settle to the bottom, it is often necessary to purge the line and replace it with water to avoid damage to the line. This one of the reasons why holding ponds are established at each pumping station along the route. (Cooke)

(See pictures of Black Mesa Pumping Station and holding holding ponds - August 28, 1984 hearing)

Item 26. Coal Ruptures and Defects

Opponents:

1. As with any pipeline, small continuous leaks or undetermined origin are possible. (Dr. Harris, Rich)
2. Using the mathematical probabilities established for ETSI, there is a clear probability of two spills or ruptures every five years. (Harris)
3. Two spills at the Black Mesa, one in the early 70's and one in the late 70's. (Cooke)

Item 27. Stream Crossings

Opponents:

1. Potential spills, as well as the environmental effects of the construction of the pipelines can be serious at the point of stream and river crossings. (Save Our Streams, Sierra Club, Clean Water Action Project, Environmental Policy Institute, (Rich)).
2. A spill where the pipeline crosses the Potomac River would be an "environmental emergency." (Poindexter)

Item 28. Pipeline Safety Technology

Opponents:

There are too many questions related to the safety of the pipeline during its operation to allow it to proceed. (Sierra Club, Clean Water Action, Project, Property Owners of Orchard Beach, Rich)

Item 29. Fatalies - No testimony.

Item 30. Overall Pipeline Safety

Opponents:

Maryland has had several serious situations involving rupture of pipelines over the past ten years. (Rich)

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## Table 6. Land-Use Impacts

## Item 31. Right-of-Way Impacts

## Opponents:

The route now being considered is only "conceptual" and may or may not originate, terminate or follow the route map. It is not possible to assess the land-use effects of the pipeline since the mapping is, at best, tentative. There is no way of knowing how closely existing rights-of-way will be followed, if they are followed at all, or if existing rights-of-way are sufficient to allow construction of the pipeline. Much more definitive information must be obtained before the land-use effects can be evaluated.

## Item 32. Marine Terminal, Preparation Plant, Dewatering Plant

## Opponents:

1. The dewatering facility involves at least 200 acres.
2. The 200 acres may be insufficient since no arrangements are made for the separation and segregation of different types of coal for storage.
3. Space available for the water treatment facilities at the dewatering facility may have to be increased, particularly since even Lehigh University admits a reverse osmosis process may be necessary.

## Item 33. Construction and Eminent Domain

## Opponents:

1. With the present uncertainty as to who will build the pipeline and whether or not Baltimore Gas & Electric Company will participate in building the pipeline, use of Eminent Domain is very questionable.
2. Since the route, the owner, and the users of any proposed pipeline are still undetermined there is no assurance that the public will benefit in any way from the granting of Eminent Domain.

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